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ABSTRACT

A project undertaken at the Gene A. Whiddon Adult Center in Fort Lauderdale, Florida sought to prepare teachers, laboratory aides, and students for the introduction of new computer technology in a language laboratory, specifically for instruction in English as a Second Language. The project had three phases: (1) computer literacy instruction for ESL teachers and lab aides; (2) a supplementary series of inservice teacher workshops on adult learning, encouragement of student computer use, and assistance with teacher incorporation of new technology into instruction; and (3) production of a student manual, based on principles of adult learning and ESL instruction, to enable student use of the laboratory. The report describes the project and its implementation in detail, including specific objectives and results for each phase. Related institutional issues and instructional principles are also discussed. Analysis of the project's results indicates that all objectives were met or exceeded in each phase. Substantial appended materials include: a project timeline and objectives; pre- and posttests and skill checklists used for teacher workshops; evaluation forms; attendance data; statistical analyses; computer usage information; student survey results; and paperwork related to the project. (MSE)

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ED 362 028

PROJECT CLASS REVISITED:
CONTINUING CONNECTIONS FOR SUCCESS IN THE ADULT ESOL LAB

by

Kathleen McCardell LaFlamme

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An Action Research Project
implemented within the Adult English to Speakers
of Other Languages Program
at the Gene A. Whiddon Adult Center
Ft. Lauderdale, FL

January, 1993

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Abstract

Project CLASS Revisited: Continuing Connections for Success in the Adult ESOL Lab.
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Descriptors: Adult Basic Education/English(Second Language)/Second Language Instruction/Second Language Learning/Limited English Speaking/Bilingual Education/Computer Assisted Instruction/Educational Media/Educational Technology/Language Laboratories/Inservice Teacher Education/Teacher Effectiveness/Teacher Improvement

This practicum proactively approached the solution of problems anticipated as the result of the introduction of radically different computer technology into an Adult ESOL language lab. The project revisited and expanded successful elements of prior action research conducted among the teachers, lab aides, and more than 400 students at an Adult Education center in the Southeastern U.S. Two of three phases of implementation focused on providing on-site, inservice training to develop and/or transfer targeted computer literacy skills and facilitate student skills, increase computer usage in the lab, and improve attitudes towards technology for language acquisition. The third sought funding the development of a student manual to promote and enable independent use. Terminal objectives were met or exceeded in each phase.

Authorship Statement

I hereby testify that this paper and the work it reports are entirely my own. Where it has been necessary to draw from the work of others, published or unpublished, I have acknowledged such work in accordance with accepted scholarly and editorial practice. I give this testimony freely, out of respect for the scholarship of others in the field and in the hope that my work, presented here, will earn similar respect.

Signed ______________________

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Chapter I

Purpose

The mission of an Adult Education center in the Southeastern United States is to promote the ideal of the individual as a lifelong learner and to provide a relaxed, comfortable, and supportive environment in which adult learners establish, pursue, and achieve their individual educational goals. The mission is predicated on a philosophy which includes the beliefs that educational decisions should be based on the needs of students and that innovations are necessary in order to meet the needs and challenges of a changing society.

The school is centrally located in a large urban area with rapidly increasing population growth and density. Birth and immigration rates continue to spiral upward and substantially impact all levels of the local educational system as well as social and economic trends. Current demographic data indicate that the center's faculty, staff, and student body continue to be reflective of the community at large and are characteristically diverse with respect to age, socioeconomic status, ethnic, cultural, and language backgrounds, attained educational levels, employment patterns, values, interests, and leisure time activities.

At the time this project was conducted, the school served an approximate total of 2,600 students through a combination of daytime, late afternoon, and evening programs which were offered among its main building and eleven satellite sites. Roughly 70 percent (1860 of 2614) of all the students attended daytime classes scheduled in the morning and/or afternoon; 754 students comprised the remaining 30 percent which represented the evening population.

To serve the needs of the numerous and diverse students, two full-time and three part-time guidance counselors were on staff to provide a wide range of services in addition to those which are available through individual instructional departments. Student testing and placement, records acquisition and production, community service activities, and academic, career, and personal counseling are a few of the countless ways in which the guidance department provides continuous and meaningful support to the students and staff alike.

The staff at the time of this study was made up of three full-time administrators, 14 full-time and 70 part-time faculty members, the previously described guidance staff, and numerous full-time and part-time paraprofessional and support personnel. All teachers were certified to teach in the fields to which they were assigned. Of the total faculty, two percent held Ph.D. or Ed.D. status, three percent had Ed.S. degrees, 43 percent held M.A. or M.S. degrees, 47 percent had B.A. or B.S. degrees, and five percent held Vocational certification. High levels of staff satisfaction remain evident in consistently low turnover rates and the excellent rating averages reported on annual school surveys.

In the center's conscientious effort to reach out to the community, marketing strategies are regularly employed and updated. Mass mailings, newspaper inserts, commercial radio announcements, the school marquis, the distribution of posters, and the recently produced, promotional video are but a few examples of the ongoing multimedia campaign to raise the community's awareness of the school's academic opportunities. All program locations are deliberately and highly accessible through major traffic arteries and the local public transportation system. Wherever possible, the vast majority have been modified to be easily reached and utilized by the physically challenged.

The school's advisory committee meets routinely and consists of community leaders and representative members from diverse social and business backgrounds. As a liaison between the school and the dynamic community it serves, the advisory committee regularly contributes valued insight and support.

Functioning within state and district guidelines, the center strives to adapt educational offerings in as flexible and relevant a manner as possible in recognition of the unique needs and abilities of its adult learning clientele. A broad spectrum of classes, therefore, is customarily tendered through the programs of Adult Basic Education (ABE), English to Speakers of Other Languages (ESOL), General Educational Development (GED) Preparation, General Education for Promotion (GenEdP), Adult Handicapped, and Business Education. Drawing (Art), Workplace Literacy, and fee-supported Education for Personal Improvement classes, such as beginning through advanced levels of Conversational Spanish, are typically included.

As the result of the center's dedication to the pursuit of academic excellence and sensitive response to client needs, many of the numerous course offerings are provided on an open entry/exit basis, five days or four nights a week, over nine-week sessions. An additional summer term has historically been included so that the school is open year-round. In all cases, courses are scheduled as flexibly as possible in order to accommodate the extracurricular activities and responsibilities of adult students.

The center demonstrates firm commitment to the promotion of success through education. Every effort is made to assist the student in planning for, and achieving, academic goals. Individualized and self-paced instruction, counseling, and career assessment remain priorities and students are encouraged and accommodated as much as possible towards these ends. The center is accredited by the Southern Association of Colleges and Schools and is State approved for Veteran Academic Education.

The Adult Basic Education program is a non-graded, non-credit program which focuses on the student's improvement in English, mathematics, reading, science, and social studies through individualized instruction. Various instructional resources, including two computers and a wide range of software, are available in the classrooms at each site for students to use in their completion of individual learning contracts across the prescribed content areas. Upon attainment of a grade placement score of 6.9 on the reading comprehension section of the Test of Adult Basic Education (TABE), the student may transfer to a credit program and pursue the completion of a high school diploma. When this study commenced, four ABE classes among three sites served two percent (36) of the total daytime student population. One class was scheduled at the main building in the evening and reached seven percent (17) of the total evening membership.

Courses in language arts, mathematics, reading, science, social studies, and computer science were offered for credit through the General Education for Promotion program in ten classes among five sites during the day. Fifteen percent (285) of the daytime students were scheduled to attend. Three classes at the main building at night attracted eight percent (59) of the evening students. Students have access to two classroom computers and content-based software at the main building. Entry into the program is based upon the student's minimum score of 6.9 on Level D of the TABE test and other assessments, including prior school records, in order to determine a suitable learning program for each individual. To facilitate maximum success, students remediate as needed and work at their own pace towards credit completion. Students in this program receive their transcript upon completion of all required credits and their diploma in June. During the 1990-1991 schoolyear, there were 16 GenEdP graduates; by February of the 1991-1992 schoolyear, eight had earned their diploma.

Throughout the center's Business Education department, technology-oriented and simulated work environments prepare students to meet the needs and job demands of the business community. Course titles include: Accounting Records, Bookkeeping/Accounting Fundamentals, Data Entry Operations, General Office Clerk, Office Procedures, Keyboarding, Typing, Introduction to Computers, Computer Operations, Word Processing Operator, Business Computer Applications, and Medical Receptionist. At the time this study was conducted, there were 23 classes in the day and 17 classes in the evening between two sites. Three extensive computer labs were available at the main site, with emphasis on the provision of the most updated hardware and software possible. For security purposes, a floating computer lab was utilized at a correctional institute which serves as a satellite site for this program. Six percent (104) of the daytime and 17 percent (211) of the evening students were enrolled in the various class sections. All participants customarily receive a certificate upon their completion of a Business Education course.

Adult Handicapped is a program comprised of non-credit education classes taught to educable, trainable, and orthopedically handicapped adults. Outside community service agencies place the students in the appropriate classes which offer opportunities for exceptional students to progress in their attainment of specific skills while they associate with their peers in groups. Students participate in lifelong learning courses which emphasize self care, functional reading, writing, and mathematics through ABE or Home Economics and Job Preparation formats. Eight daytime, but no evening, classes were in session at one of the center's satellite sites. A computer lab was included. Membership in this program was equivalent to nine percent (175) of the overall daytime student population. Certificates are presented throughout the year in coordination with, and recognition of, individual accomplishments.

The GED program captured 34 percent (635) of daytime and seven percent (51) of evening enrollments. Twenty-one classes were presented among three sites in the day. Two additional classes were situated in the main building at night. The GED classes provide skills assessment, and self-paced preparation and practice opportunities towards the student's acquisition of a high school diploma. The majority of daytime class sections at the time of this study were offered at a satellite within a correctional facility. Students enrolled in the GED classes were able to share access to the floating computer lab which also served the ABE classes at this location. Five computers were available at the second satellite, but none have been provided yet at the third, due to space constraints.

The General Education Development Test is nationally normed and is administered at numerous and strategic locations throughout the country. Students are tested in the areas of reading, mathematics, science, social studies, and writing skills. For the 1990-91 school year, 157 GED Prep students received their completed transcript and GED diploma through the center. At the time this study was implemented, 76 had been awarded their transcript and diploma to date.

The introduction and development of basic drawing skills are the focus of Drawing I. Three sections of the class were offered in the evening at one of the center's satellite locations. Seventeen percent (133) of the evening students were enrolled.

A Workplace Literacy class was offered at another satellite site in the afternoon. The enrollment of 35 students represented two percent of the total daytime student population. Certificates are awarded in June each year to all students who have participated in the course of study.

Conversational Spanish is fee-supported and was available in two beginning, one intermediate, and one advanced sections which were offered in the late afternoon at the main building. Five percent (84) of the daytime students were enrolled.

The ESOL program claimed 27 percent (506) of the daytime and 38 percent (283) of the evening attendance. Fourteen classes were located among four sites in the day; seven classes were offered between two sites at night. Students participating in the ESOL program represented more than 50 countries and 35 native languages.

Instruction is offered in English from the pre-literate level, for students who have little or no pre-existing literacy skills in their native language, through the advanced level, which includes Test of English as a Foreign Language (TOEFL) preparation. At each level, student class assignment and instruction are based upon the individual's English language proficiency in the skill areas of listening, speaking, reading, and writing. Equal attention is given to coping skills and communicative competence. The ESOL students are awarded certificates annually in June in recognition of their participation in, or completion of, a program level of study. Over 500 certificates were issued to participants in each of the last two years.

The competency-based ESOL curriculum is sequenced vertically and organized in a spiral and layered manner to promote the student's maximum growth as he or she progresses. It is delivered to the multicultural, multi-lingual groups through a broad and eclectic range of teaching/learning strategies, techniques, activities, and materials. Language skills are presented and developed within situational contexts and the separation of form and meaning is avoided. The language lab component complements classroom instruction by furnishing students at each level with a wide variety of interactive language learning selections, including numerous audio, visual, and tactile materials, nine computers, and diverse types of software.

Insofar as it is held that adult students are better able to explore their individual learning abilities, aptitudes, attitudes, and alternatives in an environment rich in resources, the connection of adult learners to an assortment of learning options is considered important to the center's persistent efforts to respond to the needs of its clientele. Despite escalating budgetary constraints, the center maintains its commitment to the provision of the most effective resources affordable as tools for learning. The ESOL language lab setting was recently renovated and is structured to provide students with meaningful and regularly scheduled opportunities for self-paced and individualized activities and practice. The ongoing assessment of student needs and the systematic acquisition and utilization of relevant resources are, therefore, essential to the lab's efficacy.

Commitment to this purpose has been demonstrated by the program's recent purchase of dramatically different computer technology as an expansion of available lab options. This unique, computer-based curriculum simultaneously integrates the skills of listening and speaking to the previously capable ones of reading and writing. In so doing, it constitutes an admirable and exciting advance in ESOL-specific materials. One administrative unit, which is connected to a printer and doubles as a student workstation, is networked with three other student workstations. Budget considerations prevented the procurement of additional equipment at the time of purchase.

The state-of-the-art software program is comprised of phonics, vocabulary, grammar, sentence structure, and reading passages. It is stored on a single Compact Disk-Read Only Memory (CD-ROM) disk. Because the storage capacity of one such disk is equal to that of approximately 1,650 floppy disks, the program is able to provide a great deal of practice material and graphic enhancement in a more efficient and manageable manner. Users gain the advantage of access to a breadth and depth of language practice while having to learn few operational procedures and patterns. Although numerous choices are available regarding language skills, levels of linguistic difficulty, and topics, the selections are consistently formatted.

On-line assistance is readily available through the click of a mouse and provides either helpful explanation or movement to other aspects of the program's curriculum. This, as well as the extensive use of graphics to illustrate vocabulary, is another important feature for ESOL students at all levels of English language proficiency.

The most distinguishing feature, however, and what prompts the need for more than basic introduction and training, or retraining in computer literacy skills, is the program's audio portion. Through a plug-in speech processing board which digitizes authentic voice, sounds, letters, and words to full-sentence length are modeled throughout the program segments. Through a headset/microphone combination, the student is able to listen, then repeat, as many times as is desired.

Hearing his or her own voice as well as that of the model, the user is able to decide when they match closely enough to warrant advance to the next frame. In order to expand and reinforce the skills, the student simultaneously reads and types the visual version. Programmed restrictions here prevent the student from advancing before success is achieved in matching the visual model. By utilizing the four skill areas at the same time, the student is able to derive maximum benefit from the interactive practice for introduction, expansion, enhancement and/or remediation purposes.

An additional bookmarking feature allows the user to store typed and recorded data on the student disk and resume work in progress at the next sitting. The teacher is similarly able to monitor student accuracy and progress by accessing the student disk through the administrative unit of the network. A word-processing feature, though not as sophisticated as most stand-alone versions, allows for the student or teacher to compose and print original work. When the subject software program is not in use, the system hardware will run IBM-compatible programs from the Disk Operating System (DOS) mode, vastly expanding the overall capabilities and cost-effectiveness.

While th[illegible] seems to be no argument against the advantages such innovative technology represents, it is also apparent that substantial investment is warranted in the training of teachers and lab aides responsible for supervising and assisting their students' use. Ongoing support in the form of on-site staff development and coaching appear essential in order to accommodate the acquisition, application, and transfer of essential technological skills.

For a number of years, this writer has been an instructor at various levels within the ESOL program and the Inservice Facilitator at the center. It has been observed that, in recent years, the school's most dramatic change concerns the increasing number of participants in the ESOL program. As stated earlier, the intensive daytime program was serving more than 500 students through 14 classes at the time this study was undertaken. Three hundred of the students regularly accessed the ESOL language lab at the main building. An additional 280 students, all of whom accessed the lab, were enrolled in the evening classes. Given the growing number and frequency of student requests to use the lab's computers before, during, and after scheduled classes, the implications were then, and continue to be now, substantive for increasing the potential for language acquisition through expanding the connections of Adult ESOL students to computer resource options.

Through formal and informal surveys, the vast majority of students in the Adult ESOL program have consistently expressed the desire to use computers in the language lab for a variety of reasons which range from sheer enjoyment through job preparation factors. As an alternative source of interactive practice, the computer offers endless patience and a refreshing change from other, more traditional and familiar forms.

That computer assisted instruction (CAI) positively impacts language acquisition efforts has been widely documented to date. However, it remains customary that ESOL students need not only English language support but also instructional support in the operational procedures regarding hardware and software. The teacher or lab aide, therefore, is often perceived to be the most singularly influential factor regarding the outcomes of the student's use of technology as a learning resource. It follows that the enhancement of the teacher and lab aide's computer skills would promote their more effective supervision and assistance, and lead to the increased student use and enjoyment of the available technology as a language learning option.

During the fall of 1990, an action research project was conducted by this writer under the title, "Project CLASS: A Computer Literacy for All Support System for Teachers, Lab Aides, and Potentially English Proficient Adults." It was developed in response to the assessed need to initiate widespread student use of computers through the introduction of basic computer literacy skills to the ESOL teachers, lab aides, and students at the site.

A multifaceted system was devised in order to provide relevant, meaningful, and continuous support to teachers and lab aides during their acquisition of those basic skills required by the in-house hardware and software. In turn, the staff assisted more than 400 ESOL students in their development and application of skills, and induced a dramatic increase in the use of computers as a lab option.

Implementation of the project was conducted in three phases: software review and development of systematic procedures, on-site staff development workshops, and the production of teaching/learning materials. Analysis of the project's results indicated that teachers, lab aides, and students at all levels of the ESOL program learned basic skills and the overall use of computers as a lab option increased five times that of the baseline measurement. Although some of the staff required more time in order to eventually develop the levels of self-confidence they desired, gains in positive attitudes towards using computers were noted among the teachers, lab aides, and students alike.

It had been predicted that not only were student and teacher turnover likely to occur but also that many newcomers would probably lack sufficient, pre-existing computer literacy skills as they entered the program. Accordingly, the content of the project's workshops and the developed materials were structured to address the anticipated need for repetitious introduction and review. Of the nine teachers and two lab aides who joined the program staff since the earlier project, all were promptly introduced to those most basic computer literacy skills required to adequately operate the lab's original equipment. New students were as routinely acquainted with the hardware, software, and procedures associated with CAI as they were made aware of alternate choices available to them.

Future purchases of additional software had also been expected. It was intended that, as they were obtained, they would be reviewed by the teachers and appropriately incorporated into student lab syllabi. What few new titles were added for use with the original equipment were, in fact, integrated without any problem in assignment or operation.

What was not foreseen was the advent and center's acquisition of the unprecedented new equipment which, by virtue of its nature, posed the familiar threat of non-use unless substantial effort was made to provide potential users with ample time and practice.

A problem existed in that none of the ESOL teachers, lab aides, or students had had any prior training or experience with the new equipment. Consequently, it had gone unused since its purchase and there was little, if any, evidence to support a conclusion that individuals had the confidence to take the initiative and explore its potential on their own. That this was a serious concern was validated through direct observation of teacher and lab aides' facial expressions in reaction to the physical appearance of the new hardware components and the receipt of comments which reflected a considerable amount of insecurity and intimidation.

All of the teachers and lab aides undoubtedly needed to become familiar and comfortable with the new hardware's features and peripherals: the hard drive, CD-ROM, mouse, combination headset/microphone, special keyboard keys, functions, and related terminology, and the 3.5 inch disk. Secondly, all needed technical assistance and support in their efforts to transfer previously learned computer skills to the new applications afforded by the addition of markedly different equipment. Additionally, all needed ample opportunity to explore the software program's content in order to effectively incorporate it into the student lab syllabi at the appropriate student levels of English language proficiency. Similarly, all needed time and opportunity to prepare to provide students with instructional and technical support as they began to access the new technology.

Another potential problem existed in that the teacher and lab aide were unable to devote much time and attention to assisting the few students able to access the new equipment during lab time. Although a total of eight computers were available at the time, the four of them which were new may be used by only one student at a time because of the software's individualized audio portion. However, for the ten classes scheduled to attend the lab, the then-current average class membership was 38 students, with an average daily attendance of 29 (75 percent). The entire class attended lab as a group at the scheduled time and students used a wide variety of resources while there. The teacher and lab aide remained highly interactive with all the students during the entire lab session. A student manual which was based upon adult learning assumptions and used ESOL techniques in its approach was lacking, but its development was considered necessary to enable and promote the student's independent use of the new technology.

The ultimate goal of this project was to facilitate the adult ESOL student's success in the process of language learning by connecting the individual student with expanded and enhanced instructional resources. The subject site's language lab setting functions as an environment rich in interactive equipment and individualized, self-directed, and self-paced learning materials towards this end. However, before such options as innovative computer hardware and software could be used effectively by the students, the ESOL teachers and lab aides had to be trained to adequately supervise and assist student use and the software content had to be appropriately assigned to the ESOL program's levels of student English language proficiency.

The project was designed to be conducted in three consecutive phases, as indicated in the timeline (Appendix A) and workshop series outlines (Appendices C and I), and to target three groups in the center's intensive daytime ESOL program. Group A consisted of the nine teachers and two lab aides hired since the time Project CLASS was implemented, Group B was comprised of the four teachers and one lab aide who participated in the original project, and Group C was made up of all ten classes of students who had access to the lab's new computer equipment during their regularly scheduled lab time. The specific, terminal objectives correlated to each phase were viewed and categorized respectively as procedural, process, and product (Appendices B, H, and P).

Phase One

The general objective governing the procedural phase was the review and further development of basic skills towards microcomputer literacy among the ESOL teachers and lab aides. The more specific objectives (Appendix B) included the development of the ESOL staff's ability to define and use terminology pertinent to in-house equipment and software, and the ability to identify and use main microcomputer components and define their functions.

Phase One's Outcome Objective One was that all daytime ESOL teachers and lab aides would participate with 100 percent attendance in all ten hours of the first workshop series, given in five, two-hour sessions over a period of five consecutive weeks, as observed by this trainer and documented by an attendance log.

Phase One's Outcome Objective Two was that all daytime ESOL teachers and lab aides of Groups A and B would evidence the application of critical thinking skills through their respective acquisition or retention of basic computer literacy skills with a minimum of 75 percent accuracy as physically demonstrated a minimum of three out of four times, without assistance, during the hands-on activities of the last four of the five workshops in the series and as observed and recorded by this researcher on the itemized, teacher-made skills checklist (Appendix E).

Phase One's Outcome Objective Three was that all workshop participants would complete a teacher-made, true/false post-test (Appendix F) with a minimum of 80 percent accuracy and demonstrate a minimum of 10 percent improvement over the pre-test (Appendix D) score, if less than 100 percent, as measured by the comparison of pre- and post-test scores. Significance would be tested by the application of t-tests to the scores of groups A and B and be based on the $p = .05$ probability level.

Phase One's Outcome Objective Four was to establish the baseline frequency of the student selection of computers as a lab option as measured by means of daily lab activity logs (Appendix N) accrued and tabulated each week throughout the five-week period.

Phase Two

The general objective of the second, or process, phase was to disseminate information and develop skills necessary for the professional growth of Adult ESOL educational personnel through a supplementary series of inservice workshops conducted by this trainer in two-hour sessions, once a week for five weeks, in the ESOL lab. In particular, the distinct objectives and activities of Phase Two (Appendix H) were to review adult learner characteristics and salient andragogical assumptions, facilitate the transfer of participants' previously acquired computer literacy skills, introduce the new equipment and specific additional skills required for its usage, provide the opportunity to explore the new software's content, and assist in identifying and applying strategies for the teachers' incorporation of the new software's curriculum into the student lab syllabi at the appropriate levels of English language proficiency.

Phase Two's Outcome Objective One was that all the daytime ESOL teachers and lab aides would participate in five two-hour workshops, once a week for five weeks, with 100 percent attendance as observed by this trainer and recorded on a separate attendance log.

Phase Two's Outcome Objective Two was that, by the end of the workshop series, all daytime ESOL teachers and lab aides would participate in discussion of adult learning characteristics and andragogical assumptions, suggest advantages and challenges to using computers as a language learning option, and collaborate to assess the perceived strengths and weaknesses of existing group skills and confidence levels. Successful completion of this objective was to be evidenced by this researcher's compilation of lists of the most pertinent items, as generated by the group, based upon their consensus, and incorporated into flipchart format for future presentation to newly hired staff as needed.

Phase Two's Outcome Objective Three was that all daytime ESOL teachers and lab aides would evidence their application of critical thinking skills in the identification, transfer, correlation, and use of basic and newly acquired computer literacy skills. Successful completion would equal a minimum of 75 percent accuracy in performance as physically demonstrated by each participant a minimum of three out of four times, without assistance, during the hands-on activities of the last four of the five workshops in the series and as observed and recorded by this researcher on a different itemized, teacher-made skills checklist (Appendix K).

Phase Two's Outcome Objective Four was that all workshop participants would complete a teacher-made, true/false post-test (Appendix L) with a minimum of 80 percent accuracy and demonstrate a minimum of 10 percent improvement over the pre-test (Appendix J) score, if less than 100 percent, as measured by the comparison of pre- and post-test scores. Significance would be tested by the application of t-tests to the scores of groups A and B and be based on the probability level where $p = .05$.

Phase Two's Outcome Objective Five was that all the daytime ESOL teachers would appraise the linguistic difficulty of the new software's content, including instructional language. Moreover, the teachers would subsequently and strategically incorporate it, lesson by lesson, into the language lab syllabi at their assigned level of instruction. Successful completion would equate with a minimum of 90 percent agreement with additions to the syllabi as recommended by this writer and approved by the center's ESOL program coordinator, and verified through this researcher's comparison of the pre-existing and revised editions at each level.

Phase Two's Outcome Objective Six was that the teachers of those ten classes with access to the new computer equipment would introduce and orient their students to its use during lab time and supplemental classroom lessons. Successful attainment of this objective would equal a minimum of 75 percent of the new computers being selected as a lab option by students during each lab period, every day for five weeks, as measured by the student lab activity logs (Appendix N) accrued and tabulated on a weekly basis.

Phase Two's Outcome Objective Seven was that students' positive attitudes towards using computers in the lab would improve by a minimum of 50 percent as measured by their affirmative responses on a survey form (Appendix O) given at the end of the five week period to students in all ten classes participating in the study.

Phase Three

The general objective (Appendix P) of Phase Three was to produce and disseminate information which would accommodate and encourage the independent use of the newly acquired technology by adult ESOL students and their teachers and lab aides. Specifically, this final stage was to seek financial support for a product in the form of a student manual based on Adult Education assumptions and ESOL techniques in order to enable and accompany the adult ESOL learner's independent use of the unique hardware and software.

Phase Three's Outcome Objective One was to apply for corporate sponsorship or grant funding for the production and dissemination of a student manual. Successful completion would be documented by the generation of a sample letter to the software producer and completed grant application form.

Chapter II

Research and Solution Strategy

A review of professional literature pertaining to the educational use of computers, whether named in any of such various terms as computer assisted instruction (CAI), computer managed instruction (CMI), computer enhanced instruction (CEI), computer based education (CBE), or computer assisted language learning (CALL), indicates that the past few decades have been replete with studies which focus on nearly every computer issue imaginable, from the discrete to the comprehensive. The corpus of research includes, but is not limited to, a profusion of data, statistics, analyses, models, and guidelines. Its entirety portrays the evolution of computer technology as an interactive partner to the student in the language acquisition process and, in a growing number of instances, the permeation of language teaching and learning by multimedia. The unfortunate side effect of the voluminous and, perhaps, overwhelming research base is that it may just as easily serve to confound as illuminate.

Considerable discussion, if not controversy, for example, persists regarding the effectiveness of computers in language learning. Large amounts of documentation have accrued, pro and con. While many of the strengths and weaknesses of past investigations have been delineated in comprehensive reviews (Dunkel, 1987; Fisher, 1983; Kulik, Kulik, and Schwalb, 1986), and more recommendations made as to future research necessary (Roblyer, 1985), it is accurate to say that, while no one has come forth to outright deny that computers have had any impact whatsoever, as of this writing, no universal agreement has been reached as to how to assess the value of technology for language learning.

An action research endeavor which this investigator designed and implemented at the subject site in the fall of 1990, facilitated computer literacy skills among adult ESOL students through the delivery of a staff development support system. The project was initiated in response to the expressed desires of the students to use the computers in the lab for language learning activities and the need to provide their teachers and lab aides with computer skills adequate for the effective supervision and assistance of students during computer access time.

No language achievement tests were conducted as a distinct feature of the project but among its results, it witnessed dramatic overall increases in the student selection of computers as a language lab option. Interaction rates among students increased and have since been maintained as students regularly request to work in pairs, or even in small groups, at individual computer stations. Levels of self-confidence have similarly increased as the result of the students' mastery of hardware and software skills and their voluntary peer-teaching and coaching of fellow classmates. Correspondingly high levels of student satisfaction and enjoyment in being able to use computers for a variety of language learning activities continue to be reported. This being the case, it appears evident that there is much to the argument advanced by Smith and Sherwood (1979), and restated by Marty (1981), leading to the conclusion that affective variables, though often elusive and difficult to quantify, have significant bearing on the student's perceived, if not actual, achievement.

It was not the project's intention to debate the power of computers, per se, to produce specific achievement effects in language acquisition in the broad sense. Rather, this study sought to anticipate and acknowledge a number of diverse obstacles presented to the center's adult ESOL students and their learning facilitators through the introduction of markedly different computer technology as a lab option (The Roach Organization, 1991).

Because the majority of the ESOL students at the subject site consistently express interest in using computers, it is believed that meaningful student learning purposes and efforts are well served through the lab's provision of computers and various software as resource alternatives. The most poignant and overriding concern of this project, then, could be articulated by questioning, "What outcomes were desired and expected, regarding this group of students at this particular site?" Compatible with the school's perceived mission, the answer, clearly, was threefold: that the adult ESOL students who want to use the new computers in the language lab should be able to do so, that their teachers and lab aides should have adequate computer skills to effectively supervise and assist them, and that the students should be enabled to use the equipment independently. Three corresponding beliefs formed the foundation of the search for, and selection of, an appropriate solution strategy for the anticipated problems which stemmed from the subject lab's recent acquisition of novel technology.

First was the belief that adult learners are better able to explore, identify, and take advantage of their individual learning abilities, aptitudes, attitudes, and alternatives in an environment rich in resource options. Adult learners, particularly adult ESOL students who come from divergent backgrounds, comprise a heterogeneous group with greatly disparate personality and behavioral traits and individual ways in which they perceive their relationship to the world around them. Cognitive learning styles and preferences, such as field dependence or independence factors as detailed by Witkin (1976), describe the ways and shapes of thinking which characterize and typify behavior. Abilities, on the other hand, describe one's degree of performance of behaviors.

Individual differences in cognitive styles and abilities are as dissimilar in their distribution among a group of students as any other characteristics which influence, and serve as variables in, the learning experience. In order for instructional efforts to be most effective, the learner and the learning experience must be in harmony. As aptly pointed out by Peterson (1983), "If the cognitive style and the teaching method are in agreement, the amount of learning will be increased." This may be construed to extend and apply as equally to the student's interaction with content and materials as with the instructor, or facilitator of learning. The more diverse the range of options, the more accurately the learner can be matched with the most helpful learning resources available. It is essential, then, that a wide range of choices be available from which various participants may select what they assess to be the most suitable for their purposes at the time.

Second, albeit closely connected to the first, was the belief that professional staff development is conducive to student achievement. Development, at all times, should be viewed as an ongoing process. For adults who are engaged in the business of facilitating the learning of other adults, commitment to the ideal of lifelong learning is intrinsic. In an encompassing guide to Adult Education, Malcolm Knowles (1984) reminds that "a teacher's most potent tool is the example of his or her own behavior." An adult educator is one who is alternately, if not simultaneously, a teacher and learner by nature and in practice. The provision of opportunities for practitioners to engage in learning activities, especially such meaningful and relevant real world experiences as on-site training in new workplace equipment which focuses on the acquisition and transfer of essential skills, should lead to their professional and personal growth as well as their increased ability to facilitate similar learning situations for their students.

In order for teachers to develop the competence levels that will be adequate for their instructional effectiveness, Joyce and Showers (1988) argue for extensive practice in the target environment. They further specify:

> Both the training and the practice have to reside comfortably in the school setting and be collaborative activities--personnel have to provide much assistance to one another during the early stages of practice with unfamiliar skills and knowledge.

Third, but neither last nor least, was the belief that the degree of an adult's empowerment to learn is equal to his or her individual control of learning activities and situations. When the adult cohort is enabled to master and then connect discrete chunks of learning, such as skills or concepts, the overall process of learning is fostered. The teacher can accommodate this process by breaking down the learning experience into manageable elements, then organizing and sequencing them in a pattern which involves the learner in the setting, pursuing, and evaluating of goals and promotes the individual's achievement. As the facilitator of another's learning, the teacher can contribute to success well beyond the confines of the classroom, or any other location in which Adult Education activities take place, by encouraging and engaging the learner's self-direction and independence in the learning experience.

Knowles (1984) refers to the insightful work of curriculum theorists B.O. Smith, W.O. Stanley, and H.J. Shores and summarizes their four basic principles for organizing the delivery of content in the form of knowledge as being from the simple to the complex, in relation to the order of prior learning, from the whole to the part, or in chronological order. When behavior is the desired outcome, numerous additional principles are recommended, including part to whole orientation, increasing scope and selection of activities, and direct experience. Although Knowles does not dispute the validity of the cited theorists' emphasis on the "three major criteria...of continuity, sequence, and integration," he duly raises caution as he notes that Ralph W. Tyler "points out that these criteria should be applied not to the logical organization of the subject matter, but to the psychological orientation of the learner."

A great many of the participants in the adult ESOL program come from cultural backgrounds which leave them unprepared to adopt outright the educational practices and patterns of the target culture. As the result, these students require much time, patience, and rehearsal of new behaviors in order to reconcile and assimilate the subtle as well as overt components of the new educational environment. At the same time students are concerned with negotiating the form of learning, they are anxious to proceed with its content. Towards this end, the more independently an adult cohort is able to function, the more efficiently and effectively he or she can progress.

In their "Natural Approach" to the application of second language acquisition theory, Krashen and Terrell (1983) adopt a holistic view of the learner, but distinguish between language acquisition and language learning. Whereas language learning includes conscious awareness of rules to be applied, most particularly with regard to grammar, these researchers submit that language acquisition occurs, "when we focus on what is being said, rather than how it is said. We acquire when language is used for communicating real ideas."

Functional ESOL strategies, such as placing the student in learning situations where he or she must cope with the communicative demands of the immediate circumstances and get the meaning, even when the form of communication seems grammatically or lexically obscure, promote the student's overall communicative competence when they consist of language input that is comprehensible. Language output may be controlled by the speaker or writer who desires to do so, but input remains largely unpredictable for the listener or reader.

In the delivery of content or modification of the learning environment, the use of ESOL techniques, such as the inclusion of visual enhancements which are queued to meaning, carefully worded explanations or directions which incorporate and reinforce previously introduced vocabulary and grammar structures, and the organization and sequence of content which fits the needs and linguistic level of the student, for example, serve to bolster the student's confidence and success rates during individualized activities.

Closely tied to the foregoing beliefs was the recognition that critical thinking, as a form of problem solving, is not simply an important factor in learning to be recognized, but a set of skills that can be learned and should be cultivated. Brookfield (1987) speaks of the vast amount of interpretation of critical thinking as a concept, but develops his practical description with particular focus on its use in adult life settings. He depicts critical thinking as a "process of active inquiry [which] combines reflective analysis with informed action," and further notes that it is

> frequently a context-embedded skill; that is, it stands more chance of being used, and of affecting how people think and act in real life, if it is developed in the contexts in which it is going to be applied.

One of the critical thinking areas which Brookfield treats with the most pertinence to one's daily thinking is that of metacognition, defined as "what we know about knowing." Brookfield quotes Flavell in expanding:

> Metacognitive processes are critical to nearly all important cognitive activities, such as those involved in communicating and comprehending information (including reading and writing), language acquisition, memory, problem solving, and social cognition.

In terms of classroom experience, Kurfiss (1988) adroitly points out that the desired integration and retention of meaning, as constructed by the learner, is largely dependent on what students "understand, not necessarily what is said." This closely parallels Zechmeister and Johnson's (1992) discussion of schemas, which they define as "organized knowledge structures." Glaser, as cited by the pair, asserts that schemas "represent knowledge that we experience--interrelationships between objects, situations, events, and sequences of events that normally occur." Zechmeister and Johnson continue:

> Schemas, in other words, are our organized prior knowledge and, as such, are critical for understanding and remembering new information. Given the task of learning something new, we typically attempt to integrate new information with what we already know. Without some prior knowledge we frequently find that comprehending new material is difficult.

It is incumbent upon the learning facilitator, therefore, not only to be aware of how and when to use various forms of knowledge, but also to instruct students in the ways of accessing and applying critical thought strategies. Along these lines, Brookfield cites Meyers to drive home the point that, "One of the keys to teaching critical thinking successfully is to simultaneously challenge students' old modes of thinking and provide structure and support for the development of new ones." And, as Brookfield further elaborates on the processes of critical thinking, he enumerates the following:

1. Processes of critical thinking are person-specific.
2. Emotions are central to critical thinking.
3. Intrinsic and extrinsic reasons for critical thinking are both important.
4. Critical insight often occurs unexpectedly.
5. Peer support is crucial to thinking critically.

The project's inclusion and application of these guideposts, therefore, appeared essential to its achievement of the sensitive and effective development of new technological skills and motivation on the part of staff and students in regard to acquiring, retaining, and appreciating them.

All of the aforementioned beliefs and concerns were highly influential in seeking out and selecting appropriate models for solution to the problems posed in this study. At other sites, including those with lower grade-level populations, within the district where similar technology had been procured for ESOL students' use, it was noted that customary inservice training provided to staff was largely limited to a combination of a day or two's training by the hardware and software companies' representatives, though not necessarily at the teacher's own site, and whatever amount of time the individual teachers chose to spend on their own, without remuneration, in exploring and practicing how to use the equipment.

Several months after the equipment had been installed and made available for student use, the companies were again requested by district-level personnel to provide an additional training session. It had been observed and reported that, because a number of teachers were still somewhat uncertain about numerous aspects of the hardware and software, the equipment was being underutilized. One of the most important lessons to be learned from this experience was the necessity of providing adequate time for practice in an atmosphere of familiarity and collegiality, just as Joyce and Showers (1988) had argued. The crucial aspects of regularly eliciting and accommodating feedback and providing ongoing support cannot be overemphasized.

In discussing successful elements of staff and program development activities within adult programs in New York City, Griswold (1989) admitted that she has "learned the most from ongoing discussion and work with groups of other teachers and administrators founded on a specific program issue or concern." Among her recommendations was the advice that:

> we need to give some thought to how teachers and administrators learn, and how programs develop. One way...is by providing an opportunity within programs, and across programs for people to work together on projects that affect instruction and/or program design.

Berman and Robbins (1989), on the other hand, described a model of staff development which was at the core of the teaching experience at their site. Interestingly, they portrayed the substantial internal and external opportunities for professional development as competitive incentives for recruiting and retaining highly qualified individuals who would otherwise seek bigger salaries elsewhere. One of the most attractive elements of this model lay in the fact that the non-instructional staff was deliberately included in the efforts. What resulted was a more thorough and expansive sharing among all who interacted.

These authors, too, mentioned collaboration, peer observation, and feedback as strong points, giving emphasis to both their ongoing nature and the variety of settings in which they regularly occurred. Despite the unfortunate fact that this particular site seemed to exemplify the exception rather than the rule when it comes to the prominence placed on professional development, it well-illustrated the benefits to be expected when a similar approach is taken and, consequently, inspired emulation. It also raised the nagging issue of priorities for, as the authors conclude, "the message to program directors is that if you value this, you have to budget it."

Although adequate levels of funding continue to escape the majority of programs seeking to improve, it is believed by this writer that much can still be accomplished by taking initiatives within programs and addressing very meaningful and relevant issues in very personal and sensitive ways. This project, then, would attempt to capture the essences of spirit, exploration, and experimentation as previously described.

For the problem of connecting students with technological options, a component to the solution which seemed to suggest itself was to identify the most meaningful and relevant skills needed, then enable the teacher to perform the procedures required by the new resources, facilitate the students' acquisition of the necessary skills, and adequately supervise and assist students with the technology's use. Guided by the recommendations of the Joyce and Showers research and encouraged by gains realized in the original project, this action research proposed to revisit the earlier project, extract key elements, and provide a series of on-site inservice workshops to the ESOL teachers and lab aides. In so doing, it intended to introduce and develop basic computer literacy skills among the staff and assist them in facilitating similar skills development in their students.

In solution to the process problem of how to effect the desired staff development, a logical conclusion rested in the design of in-house inservice activities which would develop the most meaningful and relevant new skills and accommodate as much interaction and collegiality as desired during the skills acquisition period. This project, then, would provide a second series of on-site, inservice workshops to the ESOL staff. In order to transfer and increase their computer literacy skills and introduce to them the different skills required for use of the lab's new technology, the project would engage the tenets of Brookfield, as well as of Zechmeister and Johnson, in its application of critical thinking skills. It would also furnish assistance and support in the process of incorporating the new software curriculum into the existing student lab syllabi at the appropriate level, according to linguistic difficulty.

Towards solving the problems anticipated with respect to the student's independent use of the new and sophisticated computer technology, and particularly in light of Knowles' wisdom regarding adult learners and Krashen and Terrell's insight concerning comprehensible input, the need for a student manual based on the combination of adult learning assumptions and ESOL techniques became apparent. Therefore, the project would seek financial support from the software producer or grant assistance in order to produce and disseminate such a product to enable and accompany the student's independent use.

In summary, this action research project drew from, and attempted to synthesize, the keen and collective expertise as cited and further noted the effectiveness of the ways and means of the earlier project undertaken toward similar ends. It, therefore, would revisit and extend the most successful elements of Project CLASS, in theory and practice, in order to avert potential problems occasioned by the nature of new technological equipment recently introduced into the Adult ESOL program's language lab. In so doing, the study intended to better enable students to set, pursue, and achieve English language goals more independently and effectively by augmenting the teacher and lab aide's abilities to support and assist students in their language learning efforts. By blending and applying cardinal and salient assumptions of Adult Education and the Teaching of English to Speakers of Other Languages (TESOL) throughout, it purported to take a proactive approach towards continuing student connections for success in the ESOL language lab.

Chapter III

Method

The project was implemented in three consecutive phases over a twelve week period. It was designed as such in order to systematically and cumulatively address the anticipated and expressed needs of the teachers, lab aides, and students which resulted from the center's recent introduction of dramatically different computer technology into the Adult ESOL language lab.

The first phase was characteristically procedural in that its main thrust was to review and further develop basic computer literacy skills among the ESOL staff. The second phase emphasized process skills in order to facilitate the participants' correlation of adult learner characteristics and assumptions with the identification and transfer of previously acquired skills. It also focused on the development of new skills required for the use and supervision of the new equipment. These phases culminated in the staff's introduction of students to the new equipment and materials. In an effort to promote and accommodate future independent orientation to and use of the equipment, the third phase concentrated on the preparation of a representative sample letter and grant application towards the seeking of funds for the production and dissemination of a student operational manual, customized for Adult ESOL users.

Several weeks prior to the initiation of the project, this writer met with the center's principal and ESOL program coordinator to present an overview of the project and its proposed timeline (Appendix A), discuss concerns and scheduling arrangements, and obtain the principal's permission for this trainer to delegate specific task assignments where necessary.

At the time of the study, the majority of the center's ESOL staff was employed on a part-time basis and, because of budget constraints, could neither be released from classroom duties nor paid for additional time in order to participate in the inservice training workshops. In an effort to provide alternative incentives, this trainer had developed and initiated the workshop series in compliance with state and district-approved guidelines and through the specified district channels. Participants classified as instructional personnel, therefore, became eligible to receive inservice points towards state and/or district recertification, as applicable; those classified as noninstructional became eligible to receive credit towards district-level programs for promotional and/or financial incentive opportunities.

Additionally, the ESOL program coordinator agreed to give priority to staff development, devote the regularly scheduled departmental meeting time of one hour per week to the workshop activities, and use alternative methods of communication to address other concerns whenever possible for the duration of the project. This considerable and much appreciated cooperation made it possible to reduce by half the amount of time individual participants would need to volunteer.

During this period, this researcher also became familiar with the newly acquired hardware and software components, piloted a hands-on preview of the software curriculum so as to determine its user-friendliness, reviewed and recommended assignment of individual lessons to their appropriate sections on the various levels of student lab syllabi, identified trouble spots that would be encountered by, and frustrating to, novice users, and addressed anticipated needs for intervention at strategic points within the project.

Phase One

Phase One focused on procedures which are basic in nature and typical to the use of CAI as a language learning option. During this phase, a series of five inservice workshops was conducted on-site by this trainer in separate sessions of two hours each, over a consecutive, five week period. Key elements were extracted from the content of Project CLASS and introduced to the recently added staff members who comprised Group A in order to facilitate their acquisition of basic computer literacy skills and familiarization with the lab's pre-existing computer equipment and the in-house software appropriate to their individual levels of class assignment.

The members of Group B, who participated in the earlier study, were simultaneously given opportunities to review previously acquired technological skills and software. As outlined in Appendix C, basic operational terms, procedures, skills, and teaching/ learning materials from the initial project were revisited. The opportunity for extensive hands-on practice and assistance was considered a priority and provided even beyond scheduled workshop time to those in each group who wished to practice basic skills, further explore long-held software, and revise or produce accompanying materials for the classroom.

Workshop One began with an overview of the series and the administration of the pre-test to establish current levels of participants' proficiency. Through a combination of lecture and hands-on demonstration, such computer basics as the types of computers, the five basic parts of the microcomputer and their functions, the floppy disk, the location and function of switches and keys, and basic terminology regarding troubleshooting were introduced and reviewed. The opportunity for questions, answers, collaboration, and interaction was on-going throughout the workshops.

A week later, Workshop Two reviewed main points of the previous session and additionally focused on disk care and handling, copyright law, the responsibilities of upholding it and instructing students in its intent and application, the uses of computer technology for instructional purposes, the types of and supplemental materials for available, on-site software, and housekeeping procedures. The limited-lecture and extended-demonstration format accommodated important practice and experimentation. The participants' demonstrations of behavioral skills were observed and recorded on checklists (Appendix E).

During the third week, Workshop Three further expanded the amount of hands-on time for review of the main points of previous sessions and introduction to computer assisted instruction (CAI) and computer managed instruction (CMI). Participants were instructed and assisted in modifying and manipulating the content of programs they would use at their level of class assignment and in accessing student records for tracking the progress of individual users. Again, the participants were observed in their performance of the behavioral objectives and results were recorded on separate checklist forms.

Workshop Four was conducted the following week and, in addition to reviewing aspects covered up to this point, introduced the topic of word processing and correlated targeted new skills to those already mastered. Hard copies of original work were produced during hands-on time. Participants were observed performing the prescribed behavioral objectives and their mastery was recorded on checklists.

The fifth and final week of the series shifted in focus from that of the learner's to the teacher's perspective. Workshop Five reviewed important and/or troublesome points of previous sessions and incorporated suggestions of learning strategies and motivational techniques to be used in introducing technological concepts and skills to students. While working in pairs, participants simulated demonstrating and assisting the use of hardware and software. The teachers and lab aides were observed in their physical demonstration of competency skills. Their performance was recorded on individual skills checklists and summarized in Appendix R. This workshop culminated with a recapitulation of the series content, time for reflection and comments, and the administration of the post-test and workshop series evaluation (Appendix G).

Hands-on experience was considered a priority throughout the phase to allow for maximum amounts of exploration and practice. Assistance in operating the equipment, troubleshooting, and selecting software materials for student use was given freely, and on individualized bases, in an attempt to reduce levels of frustration and promote the effective and efficient use of the available options. Specific skills were targeted by virtue of their nature as inherent to the effective supervision and assistance of students that the teachers and lab aides are expected to provide when computers are utilized in the lab.

The computer literacy skills acquisition by Group A members and skills retention by Group B members were measured by their completion of the teacher-made, true/false, pre- and post-assessments (Appendices D and F) and a comparison of the scores. T-tests were applied to each group's scores (Appendices S and T) to determine whether a probable significant difference resulted from the workshop training. In addition, the itemized, teacher-made skills checklist (Appendix E) was used to record each participant's demonstration of mastery of each of the 22 targeted skills, a minimum of three out of four times, without assistance, during the last four of the five workshops in the series.

The frequency of student selection of computers as a lab option was measured from the daily lab activity logs. Selections were entered by the members of each class as they attended lab at regularly scheduled times. The logs were accrued and tabulated each week for five weeks, then summarized in Appendix BB.

Although students were able to select the original computer equipment in the lab, doubts regarding the students' readiness to access the new equipment before they acquired the necessary and prerequisite new skills, as well as concerns for the avoidance of costly damage, prompted the ESOL program coordinator's decision to disallow student access to the new equipment until the teachers, lab aides, and students had been sufficiently oriented to the procedures for its use. Consequently, the lack of student selection of the new equipment during this phase constituted a baseline of zero percent student selection of the new equipment as a lab option. Student lab activity logs for this period provided verification.

Phase Two

Phase Two emphasized processes to facilitate the correlation of adult learner assumptions with the identification and transfer of those previously acquired skills which would serve as a knowledge base and foundation of experience for use of the new equipment. An additional ten hours of inservice was conducted on-site by this trainer in a series of two-hour workshops over the subsequent five weeks. The workshops again addressed all the daytime ESOL teachers and lab aides and included the introduction and extensive hands-on practice of the separate and additional skills necessitated by the unique nature of the new computer equipment. Opportunities were continuous for participants to explore the content of the new, computer-based curriculum and receive assistance in incorporating it into existing lab syllabi at appropriate student language proficiency levels.

Workshop One commenced with an overview of the series content and the administration of the pre-test (Appendix J) to assess current levels of proficiency and serve as a basis for later comparison with post-test (Appendix L) scores. Through techniques of group discussion, characteristics of adult learners and pertinent andragogical assumptions were elicited and explored within the context of their application to technology-based learning options. Lists of key points to be considered were compiled and later converted into flipchart format for future use in presentations. Hands-on time enabled participants to review the basic parts of the computer and their functions, become acquainted with new peripheral devices, compare and contrast keyboard features, and experience the enhanced computer curriculum components of listening and speaking while reading and writing.

Workshop Two reviewed the previous week's content and focused attention on the correlation of computer terminology, the location and functions of switches, and special keys and indicators. During this session, comparison and contrast of 5.25 and 3.5 inch disks were made. The procedures for software storage and handling and key points regarding copyright law were revisited. The classifications of software as they are used for instructional purposes and as they apply to the new equipment and materials were reviewed. Procedures to access and manipulate the new equipment, lesson material at various levels of the program's curriculum, and supplemental materials including the teacher manual, were demonstrated to and practiced by all participants during the hands-on portion which comprised the bulk of the session. Individual members were observed and successful, physical demonstrations of targeted behavioral competencies were recorded on separate, itemized skills checklist forms.

The following week, Workshop Three reviewed previously covered content and provided hands-on time for the practice of acquired skills. In addition, the student recordkeeping and teacher management capabilities of the new equipment were introduced, demonstrated, and experienced. Participants were again observed and their performance and mastery of the behavioral objectives were recorded on checklists.

Workshop Four provided a maximum amount of opportunity for the review and practice of acquired skills. Participants continued to be encouraged to collaborate extensively in preparation for their assignment of software content to the various levels of student language lab syllabi. Observations of skills demonstrations were recorded on individual checklists during this session as well.

Workshop Five, held during the fifth and final week of the series, considered salient points of review from the perspective of what students most need to know in order to effectively utilize the new equipment as a learning option. The session included simulations of demonstrating and providing assistance to students regarding operations and procedures. Final observations of mastery of targeted behavioral objectives were conducted and recorded on checklists. A summary was prepared (Appendix X). As in all other sessions throughout the series, questions, answers, suggestions, concerns, and comments were encouraged and accommodated. The post-test and series evaluation

(Appendix M) were administered at this time and staff members were given instructions for the distribution, administration, and collection of student surveys (Appendix O).

The ESOL staff members had been invited to form peer groups within their levels of class assignment and collaborate extensively during and beyond each of the series in order to reduce their feelings of anxiety, isolation, and intimidation. Throughout the entirety of the project, their evaluative feedback as to the suitability of software programs or program segments for their class levels and their discovery of operational difficulties and program content errors and inconsistencies were encouraged, recorded, and acted upon by this trainer as quickly as possible.

Classes scheduled to attend the lab were oriented to the new equipment by their teachers and lab aides during this stage and permitted to include it among their array of choices. The teachers and lab aides were observed and supported by this trainer as they supervised and assisted their students' use of the new equipment. Student selection of the new equipment as a lab option was tracked via the daily lab activity logs and tabulated on a weekly basis. The surveys to assess student attitudes about using technology as a language lab learning option were conducted at the end of the phase and tabulated.

Following the conclusion of the workshop series, all the accrued behavioral competency checklists were tabulated and a summary of the results was prepared (Appendix X). In addition, pre- and post-test scores were compared and statistically treated through the application of t-tests (Appendix Z) for which probable significance had been set at the $p = .05$ level.

Phase Three

During Phase Three, the project's last two weeks, feedback which had been received from the ESOL staff and accrued from the beginning of the implementation period was analyzed towards the validation of the need for, and final assessment of the value of, the future production and dissemination of a manual to enable and accompany the student's independent use of the new computer technology. A representative sample letter and grant application form (Appendices EE and FF, respectively) were prepared by this writer for use in seeking corporate sponsorship from the software producer or grant assistance in funding such a manual.

Chapter IV

Results

This action research project sought to provide a practical and effective solution to problems which were anticipated as the result of the center's addition of markedly different computer enhancements and which individually and collectively affected the staff and student members of the Adult ESOL program. Admittedly, the ultimate value of this action research project and the innovations it purported to implement will be best determined by, and through the subjective interpretations of, the specific clientele of the program. This is as it should be, for they are the ones who stand to gain the broadest and deepest possible benefit from their use of the equipment as a language teaching/learning lab option.

Whereas improved student achievement remains the paramount concern of all, it must be noted that the increased enjoyment and motivation of adult cohorts are often equally prominent factors to be considered in the overall appraisal of worth. Such affective factors, though more difficult to quantify, if not completely elusive at times, may present themselves as major sources of influence when taking action to respond to student needs. Certainly, this was true in the case of this study. As the result, the ultimate selection and development of outcome objectives, and the determination of their most meaningful and relevant ends, and means of their measurement, are viewed as natural outgrowths of the questions which the study intended to answer and the problems which the project hoped to alleviate.

Descriptive data was collected by means of survey questionnaires, interviews, and/or observations in order to assess such objectives as those which pertained to the staff's attendance at inservice workshops and identification of adult learner characteristics and assumptions, the confirmation of reported degrees of frequency regarding the student selection of computers in the lab, and changes in staff and student confidence levels and attitudes regarding technology as a teaching/learning option.

Correlational data was statistically treated through the application of t-tests in order to provide insight as to the relationship between the pre- and post-test scores of the two groups participating in each of the inservice training series. The t-tests for these nonindependent samples were applied to determine whether there was a significant difference between the means for the same, small, and somewhat matched sample groups at two different times, as the result of the inservice training.

Phase One

Phase One's Outcome Objective One was that 100 percent of the daytime ESOL teachers and lab aides would participate in a total of ten hours of inservice given in a series of five, two-hour workshops over a period of five consecutive weeks. All participants successfully completed the objective, as observed by this trainer, documented from cumulative attendance logs, and summarized in Appendix Q.

As it was clear that the provision of monetary incentives to participants was prohibited by budget constraints, this trainer sought a viable alternative and developed, initiated, and conducted the workshop series in compliance with state and district-approved and/or required inservice procedures and through the appropriate, formal channels. As the result, all participants classified as instructional personnel became eligible for and, in fact, received 10 inservice points at the conclusion of Phase One toward their state or district level re-certification, as applicable per individual circumstances.

Noninstructional personnel do not hold state certification, but all of the lab aides became eligible for, and were subsequently awarded, 10 points at the district level towards their cumulative record of continuing education and professional development. In addition, the workshops were approved for credit in the district-level achievement program which was recently implemented to provide financial incentives for qualified employees to improve their current job skills and promotional opportunities. All inservice points acquired as the result of the completion of this project's workshop series are recorded in, and documented by, the district's inservice/certification database.

Phase One's Outcome Objective Two was that all daytime ESOL teachers and lab aides would demonstrate the acquisition or retention of selected basic computer literacy skills with a minimum of 75 percent accuracy as physically performed without assistance, a minimum of three out of four times during the last four sessions of the workshop series. Results include that every participant exceeded the expected outcome by demonstrating, without assistance, 100 percent mastery of each of the 22 targeted behavioral objectives, in each of the four attempts. All individual demonstrations were observed by this trainer, recorded on separate enumerated skills checklists, and summarized in Appendix R.

Phase One's Outcome Objective Three was that all participants would complete the teacher-made, true/false post-test (Appendix F) with a minimum of 80 percent accuracy and demonstrate a minimum of 10 percent improvement over the pre-test score, if less than 100 percent, as measured by the comparison of pre- and post-test scores.

Group A consisted of the nine teachers and two lab aides who joined the center's ESOL program after the initial version of Project CLASS had been conducted. Although all the teachers and lab aides acknowledged some prior, but limited, experience with computers, all expressed moderate-to-high levels of uncertainty regarding their knowledge base and practical skills. Eight teachers in the group presented scores which ranged from 68 through 96 percent and produced a subgroup mean of 84.50 percent. One Group A teacher and both lab aides scored 100 percent on the pre-test and consequently raised the total Group A mean to its 88.73 percent level. Each of the Group A members achieved a score of 100 percent on the post-test.

Table 1
A Comparison of Series One Test Scores for Group A

Participant:	Pre-test Score:	Post-test Score:	Score Difference:
Teacher A	72.00	100.00	+28
Teacher B	100.00	100.00	--
Teacher C	84.00	100.00	+16
Teacher D	96.00	100.00	+ 4
Teacher E	68.00	100.00	+32
Teacher F	84.00	100.00	+16
Teacher G	96.00	100.00	+ 4
Teacher H	80.00	100.00	+20
Teacher I	96.00	100.00	+ 4
Aide N	100.00	100.00	--
Aide O	100.00	100.00	--
Group Mean:	88.73	100.00	+11.00

Group B, on the other hand, was comprised of four teachers and one lab aide who had participated in the initial project. In comparison to their Group A colleagues, Group B members had verbally expressed slightly higher degrees of confidence with respect to their computer literacy knowledge base, but similar moderate degrees of confidence regarding their practical skills. Group B members presented pre-test scores which ranged from 76 through 100 percent and produced a group mean of 90.40 percent. Combined, Groups A and B produced overall mean percentages of 89.57 on the pre-test and 100 on the post-test.

Table Two
A Comparison of Series One Test Scores for Group B

Participant:	Pre-test Score:	Post-test Score:	Score Difference:
Teacher J	76.00	100.00	+24
Teacher K	100.00	100.00	--
Teacher L	100.00	100.00	--
Teacher M	84.00	100.00	+16
Lab Aide P	92.00	100.00	+ 8
Group Mean:	90.40	100.00	+9.60
Groups A and B Overall Mean:	89.57	100.00	+10.30

It had been predetermined that significance would be tested through the application of t-tests to the scores of the nonindependent sample groups A and B, with probable significance set at the level where $p = .05$. For Group A, with 11 total participants, $t = 3.19$ (Appendix S). Where $p = .05$ and $df = 10$, the table value of $t = 2.228$ is required in order to reject the null hypothesis that the workshop training had no effect. As 3.19 is greater than 2.228, the null hypothesis is hereby rejected and a probable significant difference is found in Group A's scores as the result of the workshop training.

Six of the Group A participants scored highly enough on the pre-test that they had no room to achieve as great an individual improvement as had been pre-set at the level of 10 percent. Consequently, each failed to meet the stated technical requirements of the objective, though through no fault of their own. In fact, by attaining perfect post-test scores, each achieved the maximum gain possible. When the overall group scores were examined, however, the mean percentage of improvement equaled 11.00. This is in excess of the expected outcome and satisfies the success criteria. Therefore, the group as a whole succeeded in meeting the objective, despite the ceiling effect experienced by the majority of the group's individual members.

Group B included tw. members who achieved perfect scores of 100 percent on the pre-test. The remaining three members had scores which ranged from 76 through 92 percent. When separated as a subgroup, those three members produced a mean score of 84 percent. When taken together with the perfect score subgroup, Group B in its entirety produced a mean of 90.60 percent. All members of the group scored 100 percent on the post-test. Inasmuch as those with less than a perfect pre-test score were to meet the stated objective's improvement requirement of 10 percent, two of the three affected members exceeded the expected outcome. The third achieved a gain of eight percent. However, in view of the fact that the scores represent maximum possible gains in each case, success is evident.

In order to determine significance, t-tests were similarly applied to the pre- and post-test scores of Group B (Appendix T). For Group B, comprised of 5 total members, $t = 2.06$. Where $p = .05$ and $df = 4$, the table value of $t = 2.776$ is required in order to reject the null hypothesis that the workshop training had no effect. As 2.09 is less than 2.776, it is not possible to reject the null hypothesis in this case. Statistically, therefore, the workshop training is found not to have made a probable significant difference for Group B. This result is attributable, at least, to the strength of two factors that were clearly operational: the ceiling effect on the participants' ability to improve their scores and the very small size of sample Group B.

In evaluating the series (Appendix U) at its conclusion, 100 percent of the participants reported that their opportunity for involvement had been excellent and 94 percent gave the training a rating of excellent, in terms of helping them do a better job. It is apparent, then, that the participants' positive attitudes were improved as the result of the training and despite the test scores' resistance to manifest statistical gain.

Phase One's Outcome Objective Four was to establish the baseline frequency of student selection of computers in the lab. It was measured by means of the aforementioned daily lab activity logs, accrued and tabulated each week throughout the five-week period, summarized (Appendix BB), and expressed in terms of the percentages of original and new computers selected by each of the ten classes scheduled to attend lab per week. Results included that the student selection of original computers during Phase One produced an overall mean of 96.80 percent, with usage measured Weeks One through Five, at rates of 100, 100, 100, 89, and 95 percent, respectively. As previously discussed, none of the new equipment was available for selection during this time. Its baseline of zero usage was established and verified by the logs for this period.

When this study commenced, the original computer equipment included four independent terminals, or workstations. Its hardware and software are of a type of manufacture which is incompatible with the new equipment and its specialized curriculum. Rather than being viewed as a drawback, the differences are considered as an advantage in that the students may thereby experience a greater variety of equipment and materials. The following table summarizes the daily rate of computer usage during Phase One, when only the original equipment was available, and is based upon data for five periods of lab attendance per day.

Table 3
Daily Percentages of Phase One Computer Selection

	Day 1	Day 2	Day 3	Day 4	Day 5
Week 1:					
Original	100	100	100	100	100
New	--	--	--	--	--
Week 2:					
Original	100	100	100	100	100
New	--	--	--	--	--
Week 3:					
Original	100	100	100	100	100
New	--	--	--	--	--
Week 4:					
Original	80	95	80	90	100
New	--	--	--	--	--
Week 5:					
Original	100	95	85	100	95
New	--	--	--	--	--
Daily Mean %:					
Original:	96.00	98.00	93.00	100.00	99.00
New	--	--	--	--	--

Weekly Mean %:	Week 1	Week 2	Week 3	Week 4	Week 5
	100.00	100.00	100.00	89.00	95.00

Phase One Overall Mean:

Original:	96.80
New:	--

From the time computers were initially introduced into the center's lab setting, they have served as a popular and effective option for language learners. As students have responded consistently on numerous school and departmental surveys and interviews, computers are attractive alternatives for a variety of reasons. This was again corroborated by the recent survey (Appendix DD) of ESOL students in which 79 percent of 270 total respondents stated they selected computers because they were interesting. This was far and above the next highest rating of 15 percent which was assigned to the reason that computers are patient. It is not surprising, then, that the usual and customary activity in the lab includes a great deal of computer usage at each of the ESOL program levels.

Phase Two

Phase Two's Outcome Objective One was that all the daytime ESOL teachers and lab aides would participate in all ten hours of the second inservice workshop series with 100 percent attendance as observed by this trainer and recorded on a separate attendance log. The result was that all participants successfully completed the objective, as observed and recorded, and summarized in Appendix V. As in Phase One, all of the instructional personnel who participated in the Phase Two workshop series received a total of 10 separate and additional inservice points towards state and/or district recertification. Noninstructional personnel received 10 district inservice points. All points are documented and available in the district's inservice/certification database.

Phase Two's Outcome Objective Two was that all daytime ESOL staff would participate in discussion of adult learning characteristics and andragogical assumptions, suggest advantages and challenges to using computers as a language learning option, and collaborate to assess the perceived strengths and weaknesses of existing group skills and confidence levels. List items were generated and negotiated to consensus within the group. Completion of this objective was regarded as successful upon the production of lists of the most salient points to be considered when incorporating technology into Adult ESOL curricula. The lists, in turn, were incorporated by this trainer into flipchart format for use in future presentations. All of the participants successfully completed each of the expected outcomes.

Additionally, at the request of the district's department of Adult and Community Education (ACE), this trainer developed a workshop concerning computer technology in ESOL for a 1992, state-level ACE conference. Entitled, "Computer Connections for Success in Adult ESOL (Appendix W)," the workshop focused on the identification and application of adult learning assumptions as a framework for incorporating CAI into the Adult ESOL curriculum, and investigated the teacher and lab aide's role in facilitating the student use of computers as a language learning tool.

The workshop was presented by this trainer to a group of approximately 40 teachers and administrators, from both in and out of the district and state, and from private as well as public educational programs and institutions. Much positive verbal feedback was received in the form of compliments and thanks for relevant and meaningful training. And, although dissemination packets were prepared and distributed on-site to each who attended, at the conclusion of the session, participants also compiled a list of several dozen requests that additional information, materials, and recommendations be sent to them. The opportunity to share with others, though not anticipated to occur so quickly or to such a diverse audience, was a most gratifying additional outcome.

Phase Two's Outcome Objective Three was that all daytime ESOL teachers and lab aides would evidence the identification, transfer, and application of basic computer literacy skills and the acquisition of the targeted additional skills that are required by the new equipment. Successful mastery of this objective had been predetermined to equal a minimum of 75 percent accuracy in performance as physically demonstrated a minimum of three out of four times, without assistance, during the last four of the workshop sessions in the series and as observed and recorded by this researcher on a separate, itemized, teacher-made skills checklist (Appendix K). Results included that all of the participants exceeded the expected outcome in that they demonstrated 100 percent mastery of each of the 22 behavioral competency objectives, in each of the four attempts. All physical demonstrations were observed by this trainer, recorded on separate checklists, and summarized (Appendix X).

Phase Two's Outcome Objective Four was that all workshop participants would complete a teacher-made, true/false post-test (Appendix L) with a minimum of 80 percent accuracy and demonstrate a minimum of 10 percent improvement over the pre-test score, if less than 100 percent, as measured by the comparison of pre- and post-test scores (Appendices J and L). Significance was to be tested by the application of t-tests to the scores of groups A and B and based on the probability level where p = .05.

None of the members of either Group A or B had had any prior training with regard to the new hardware or software in the lab. For this reason, it was thought unnecessary to retain them in separate groups with regard to the second workshop series. In examination of all 16 pre-test scores as comprising one group, a mean of 93.75 was produced. Twelve of the 16 members had scored a perfect 100 percent on the pre-test. All 16 attained a perfect score of 100 percent on the post-test. T-tests were applied to the pre- and post-test scores (Appendix Z) in order to determine the probable significance, if any, with regard to the effect of the inservice training. Where p = .05 and df = 15, the table value of t = 2.131 is required to reject the null hypothesis that the training had no effect. Whereas t = 1.98 for the homogeneous group and 1.98 is less than 2.131, it is not possible to reject the null hypothesis in this case. Statistically, one must conclude that the workshop training made no probable significant difference.

It was apparent that an unanticipated variable had intervened in order to have produced such an effect as would have resulted in 12 participants receiving perfect pre-test scores shortly following their statements that they had had no previous training or experience with what comprised the test's content. Informal interviews were then conducted to determine what had actually taken place. It was then learned that participants had not only received print material introducing the new technology just prior to administration of the pre-test, but some had also just attended, as well, an introductory session provided by company representatives through arrangements made at the district level. Though this unforeseen event skewed the test results statistically, the ultimate intention of the objective must not be overlooked.

Specifically, the teachers and lab aides were to increase their knowledge base concerning technology and its use in the classroom. Whereas none of the participants had had any real, overt knowledge of the new equipment prior to training, all of them increased their knowledge substantially by the conclusion of the workshop series, either through training obtained via the company representatives or through the on-site workshops. It may be construed that the participants' additional exposure to information and demonstration was greatly reinforcing and led to increased retention rates.

Because four of the workshop participants had not previewed equipment with company representatives, a separate subgroup was formed and a t-test (Appendix AA) was performed to determine the relationship between their pre- and post-test scores as the result of only having read the introductory print materials. This subgroup consisted of three teachers and one lab aide whose pre-test scores ranged from 60.00 through 90.00 percent in 10 point increments and produced a mean of 75.00 percent. Where the standard for probable significance is set at $p = .05$ and $df = 3$, the table value for $t = 3.182$ in order to reject the null hypothesis that the preview made no difference. For this subgroup, $t = 3.873$. Whereas 3.873 is greater than 3.182, the indicated difference is probably significant and the null hypothesis is rejected. It is concluded that there is a probable significant difference in the means as the result of the preview. It is clear that the expected outcome of the original objective, as worded, was not met statistically. Nevertheless, an examination of results in light of the unexpected and intervening preview training indicates that workshop training did produce positive and probably significant differences.

Phase Two's Outcome Objective Five was that all the daytime ESOL teachers would review and appraise the linguistic difficulty of the new software's content, including instructional language. Moreover, the teachers subsequently and strategically were to incorporate it, lesson by lesson, into the language lab syllabi at their assigned level of instruction. Successful completion was equated with a minimum of 90 percent agreement with those additions as were recommended by this trainer, approved by the center's ESOL program coordinator, and verified through this researcher's comparison of the pre-existing and revised editions at each level. The results were that all participants met the objective's expected outcomes as stated. Handwritten revisions of the lab syllabi were reviewed for accuracy and correlated with this trainer's recommendations for assignment. The drafts were then submitted to and approved by the ESOL program coordinator and referred for typing and dissemination in replacement of previous versions.

Phase Two's Outcome Objective Six was that all the teachers of the ten classes with regularly scheduled access to the new computer equipment would introduce and orient their students to its use during their assigned lab time. Teachers also had the discretion to include additional preparation activities in the classroom. It was observed that all the teachers took advantage of the opportunity to do so and later reported that they had given both introductory and follow-up expansion lessons, using paper handouts and board illustrations to reinforce vocabulary and the individual steps of operational procedures. Successful completion of the objective was to equal a minimum of 75 percent of the new computers being selected as a lab option by students during each lab period, every day for five weeks, as was measured by the student activity logs, accrued and tabulated on a weekly basis. With the exception of five individual lab periods during the first week, the stated objective was not only met, but exceeded the majority of the time throughout the duration of Phase Two.

Table 4
Daily Percentages of Phase Two Computer Selection

	Day 1	Day 2	Day 3	Day 4	Day 5
Week #1:					
Original:	100.00	90.00	100.00	100.00	100.00
New:	--	70.00	95.00	95.00	80.00
Week #2:					
Original:	100.00	95.00	100.00	100.00	100.00
New:	95.00	100.00	100.00	100.00	100.00
Week #3:					
Original:	100.00	100.00	95.00	100.00	100.00
New:	100.00	100.00	100.00	100.00	100.00
Week #4:					
Original:	100.00	100.00	100.00	100.00	100.00
New:	100.00	100.00	100.00	95.00	100.00
Week #5:					
Original:	100.00	100.00	100.00	100.00	100.00
New:	100.00	100.00	100.00	100.00	100.00

Weekly Mean %:

	Week 1	Week 2	Week 3	Week 4	Week 5
Original:	98.00	99.00	99.00	100.00	100.00
New:	68.00	99.00	100.00	99.00	100.00

Phase Two Overall Mean %:

Original:	99.20
New:	93.20

As is shown in Appendix CC, computer usage was at zero percent for the first day, but was due to the fact that the initial workshop of the series was held at the end of that same day. The second day witnessed a 70 percent usage rate. Three of the five teachers in lab that day stated they were not comfortable in having students work at more than two of the new computers at a time that first day because of their limited amount of time to supervise and assist them in getting started. For the next five days, usage rates fell between 80 and 95 percent. For the remainder of the phase, rates continued at a full 100 percent, except for two days when one of the machines had technical difficulty. It was learned that one of the student data diskettes was defective and had to be replaced. During this time, student and teacher interest was maintained at extremely high levels.

Usage rates for the new equipment averaged 68, 99, 100, 99, and 100 percent, respectively, for the five weeks of the phase. A mean of 93.20 percent is thus represented for Phase Two. In addition, it is noted that selection of the original equipment during this time was maintained at similarly high levels: 98, 99, 99, 100, and 100 percent, for the five respective weeks, indicating a mean overall rate of 99.20 percent. This evidence supports the conclusion that all the computers are highly utilized in the lab, selected by the ESOL students at each of the program levels, and providing language teachers and learners in the program with an interesting and meaningful option. It may be further construed that students may be learning more, as well as more effectively, simply by virtue of the fact that they are exercising their personal preferences in choosing resources.

Interestingly, most students stated that they felt very comfortable with the new equipment, they liked the voices in the program because they were authentic and not at all robotic, and they especially enjoyed recording their own voices as they worked their way through program segments. It is believed that, because these students had been accustomed to recording their voices on Language Master equipment and had had extensive amounts of experience with audiocassettes, they were not at all intimidated by the voice capability of the new computers. Teachers, for the most part, were undoubtedly far more skeptical at first than the vast majority of students. Their initial reaction quickly subsided, however, when they encountered such enthusiasm among their students.

Phase Two's Outcome Objective Seven was that there would be a minimum of 50 percent improvement in the students' positive attitudes towards the use of computers in the lab as measured by their affirmative responses on a teacher-made survey administered at the end of the fifth and final week of Phase Two to the ten classes of students who participated in the study.

A total of 270 ESOL students responded to the questionnaire. Whereas 300 students comprised the total number regularly scheduled to access the lab at the time and participating in the study, a rate of 90 percent of the questionnaires were completed and returned. Teachers and students alike reported that the students were highly motivated to express their feelings, despite the difficulty that some students, particularly at the pre-literate and beginning levels, experienced with the survey's vocabulary.

As indicated by the results presented in Appendix DD, 68 percent (203) of the students responded that they sometimes used the computers in the lab, 27 percent (82) said they used them on a frequent basis, but only .05 percent (15) stated that they never had. When using the computers, 36 percent (107) reported that they preferred to practice grammar, followed by 26 percent (78) who preferred learning vocabulary. The highest response came from the 38 percent (114) who, above all, preferred the choice of listening, speaking, reading, and writing at the same time, as offered only by the new computer equipment.

When asked to compare the new equipment to the original, 48 percent stated that the new computers were more interesting. A total of 31 percent (92) said that they were more helpful. Eleven percent (32) felt that the new equipment was more difficult and only .02 percent (7) reported that it was frustrating. To the question of what they believed helped them the most in the lab, 53 percent (158) selected computers for listening, speaking, reading, and writing and demonstrated success in meeting the criteria of 50 percent improvement in their attitudes towards the new technology. When compared to the 19 percent (56) who selected computers for reading and writing only, it is clear that, even with a very short period of time to familiarize themselves with the new equipment, a preponderance of students realized benefit and enjoyment from the enhanced options.

At the conclusion of the Phase Two, an evaluation

(Appendix Y) of the workshop series was conducted. One hundred percent of the participants responded that their opportunity for involvement was excellent, while 88 percent gave a rating of excellent to the training in terms of helping them do a better job. The remaining 12 percent supported a rating of good, by comparison. Therefore, it is concluded that the inservice training made a meaningful and relevant difference to all its participants and was highly successful as the result.

Phase Three

Phase Three's Outcome Objective One was to apply for corporate sponsorship or grant funding for the production and dissemination of a student manual. Successful completion equated with and is documented by the generation of a sample letter to the software producer and a completed grant application form, as shown in Appendices EE and FF.

Chapter V

Recommendations

Due to the extensive number of students in the center's evening ESOL program who stood to immediately benefit from the results of this action research study, this researcher made a recommendation to the center's principal and ESOL program coordinator that the project be replicated in a condensed form with the night ESOL faculty and staff. Administrative approval was enthusiastically granted and the mini-project was implemented without delay. Because the evening classes utilize the same student syllabi, equipment, materials, and lab procedures as the daytime classes, the unnecessary duplication of certain project aspects was avoided.

The daytime staff had accomplished important and substantial groundwork in the identification of technical problems in operating the equipment, the discovery of program inconsistencies and content errors, and the assignment of the new software's program segments to corresponding sections of the existing student lab syllabi. Staff and students in the evening program automatically became additional beneficiaries of these efforts. The focus of the condensed version, therefore, was on the provision of introductory workshops, supervised hands-on experience time in the lab before evening classes commenced, opportunities to collaborate with this trainer and peer participants, and the sharing of information with staff and students through handouts, teaching/learning materials, and systematic procedures.

Inasmuch as teachers and lab aides continue to join the center's staff, it is herein recommended that the project's content be revisited on a regular basis for update and revision as needed. In this way, efforts to provide meaningful and relevant inservice training may be conducted on-site in a continuous context.

In broader terms, the project may be generalized to similar sites at the local, state, or national level. Implications for initiating an on-site support system for staff development regarding the various uses of technology for language learning continue to be pervasive in many Adult ESOL programs and sites, regardless of the number of student participants. In order to contribute to the available professional literature with hopes that it will serve to encourage, if not guide, future efforts elsewhere, the final report may be submitted to the ERIC Clearinghouse for the Center of Applied Linguistics and National Clearinghouse for Bilingual Education for their publication consideration. Similarly, it may be offered to such national organizations as TESOL International for inclusion in any of its many and diverse interest publications.

Finally, and most importantly, follow-on for this project will include continued attempts to secure financing for the production and dissemination of a student manual to accompany the subject hardware and software. Based on learning assumptions which are sensitive to the unique characteristics of adults and through the use of ESOL methods and techniques, such a manual will accommodate the independent use of the subject technology and promote its enjoyment. Whereas these factors are essential to the success of Adult ESOL students, they deserve no less.

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Appendix A

Project Timeline

Project Timeline

PHASE:	**PROCEDURAL**					**PROCESS**					**PROD**	
WEEK:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Research manual rationale	X	X	X	X	X	X	X	X	X	X	X	
Compile funding sources	X	X	X	X	X	X	X	X	X	X	X	
Administer pre-test	X											
Log inservice attendance	X	X	X	X	X							
Log student lab choices	X	X	X	X	X							
Provide hands-on	X	X	X	X	X							
Directly observe skills	X	X	X	X	X							
Conduct Workshop #1	X											
Conduct Workshop #2		X										
Conduct Workshop #3			X									
Conduct Workshop #4				X								
Conduct Workshop #5					X							
Administer post-test					X							
Tabulate/compare scores					X							
Administer pre-test						X						
Log inservice attendance						X	X	X	X	X		
Log student lab choices						X	X	X	X	X		
Provide hands-on						X	X	X	X	X		
Directly observe skills						X	X	X	X	X		
Conduct Workshop #6						X						
Conduct Workshop #7							X					
Conduct Workshop #8								X				
Conduct Workshop #9									X			
Conduct Workshop #10										X		
Administer post-test										X		
Administer student survey										X		
Tabulate/compare scores										X		
Prepare funding requests											X	X

Appendix B

Phase One Objectives

Phase One Workshop Series Objectives

Using Computers in the Adult ESOL Language Lab

General Objectives	Specific Objectives
1.0 To develop basic skills in microcomputer literacy.	1.1 To define and use microcomputer terminology.
	1.2 To identify main microcomputer components and define their functions.

Activities	Evaluation Procedures
1.1.1 Live lecture & demonstration incorporating terminology in context.	1.1 Complete true/false test with minimum of 80% accuracy (20 of 25).
1.2.1 Demonstration and hands-on activities.	1.2 Physical demonstration of computer skills with minimum of 75% accuracy (3 of 4).

Adapted from Broward County Public Schools, Master Inservice Plan, Rev. Ed., 1991.

Appendix C

Phase One Workshop Series Outline

Workshop Series I Outline

Using Computers in the Adult ESOL Language Lab

Workshop One:

- I. Introduction to workshop series
  - A. Welcome
  - B. Purpose
  - C. Schedule
  - D. Attendance
  - E. Pre-test

- II. Introduction/review of computer basics
  - A. The friendly computer
  - B. Definition of computer
  - C. Types of computers
    - 1. Mainframe
    - 2. Minicomputer
    - 3. Microcomputer
  - D. The five basic parts of a microcomputer
    - 1. Keyboard
    - 2. Disk drive
    - 3. CPU (central processing unit)
    - 4. Monitor
    - 5. Printer
  - E. Input/Output
    - 1. Definitions
    - 2. Functions of five basic parts
      - a. Keyboard: input
      - b. Disk drive: input/output
      - c. CPU: input/output
      - d. Monitor: output
      - e. Printer: output
  - F. Floppy disk
    - 1. What it is
    - 2. What it does
  - G. Location and function
    - 1. On/off switches
    - 2. Special indicators
    - 3. Special keyboard keys
  - H. Useful computer terms for troubleshooting
    - 1. "To boot" a disk
    - 2. "To reboot" a disk
    - 3. "To crash" a disk
    - 4. "Break in line #_"
    - 5. I/O Error
  - I. Hands-on experience
    - 1. Run "Computer Literacy" tutorial
    - 2. Run selected software at assigned student level

Workshop Series I Outline

Using Computers in the Adult ESOL Language Lab

Workshop Two:

- I. Review of Workshop One's main points
  - A. Names of five basic parts of computers
  - B. Location and function
    - 1. On/off switches
    - 2. Special indicators
    - 3. Special keyboard keys

- II. Disk care and handling
  - A. Review of floppy disk
    - 1. What it is
    - 2. What it does
  - B. Software Do's and Do Not's
    - 1. Illustrated handouts
    - 2. Rationale
  - C. Copyright Law
    - 1. What it is
    - 2. Responsibilities

- III. Using the computer for instructional purposes
  - A. Types of software on the market
    - 1. Drill and practice
    - 2. Tutorial
    - 3. Simulation/Demonstration
    - 4. Games
    - 5. Applications
  - B. Available in-house software
    - 1. What it is
      - a. "Canned" software
      - b. MECC software
    - 2. Where it is located
    - 3. How it is cataloged
    - 4. How it is incorporated into syllabi
    - 5. How it is stored
      - a. Manuals
      - b. Supplemental materials
    - 6. How it is accessed

- IV. Hands-on experience
  - A. From student's perspective
  - B. From teacher's perspective

Workshop Series I Outline

Using Computers in the Adult ESOL Language Lab

Workshop Three:

- I. Review of previous workshop material
  - A. Workshop One's main points
  - B. Workshop Two's main points
  - C. Computer Assisted Instruction (CAI)
    - 1. What it is
    - 2. Bare facts needed to begin using it
      - a. Location of program content info
      - b. How to modify/manipulate content
  - D. Computer Managed Instruction
    - 1. What it is
    - 2. Bare facts needed to begin using it
      - a. Location of student tracking info
      - b. How to access student records
  - E. Hands-on experience with in-house software
  - F. Review of troubleshooting
    - 1. What error messages are
    - 2. What to do when they appear

Workshop Series I Outline

Using Computers in the Adult ESOL Language Lab

Workshop Four:

I. Review of previous workshop material

II. Hands-on experience
  A. Introduction to word processing
  B. Introduction to "hard copy"

Workshop Series I Outline

Using Computers in the Adult ESOL Language Lab

Workshop Five:

- I. Introduction of computer literacy skills to students
    - A. What to teach students about computers
        - 1. hardware
            - a. names of parts
            - b. locations of on/off switches
            - c. getting help
        - 2. software
            - a. how to access
            - b. keyboard keys needed to run
            - c. getting help
        - 3. disk care and handling
            - a. do's and do not's
            - b. advising teacher/lab aide of trouble
        - 4. glossary of basic terms
        - 5. motivating factors
    - B. Simulation
        - 1. checking-out students on equipment
        - 2. assisting students with problems
    - C. Recap summary of workshop contents
    - D. Questions, answers, suggestions and comments
    - E. Post-test
    - F. Survey questionnaire
    - G. Thanks

Appendix D

Phase One Workshop Series Pre-Test

Using Computers in the Adult ESOL Lab
Pre-test

Name: ______________________________ **Date:** ____________

Directions: Read each statement carefully. Circle **T** if it is true; circle **F** if it is false.

About Apple II computers:

1. The main components of the system are the central processing unit, disk drive, monitor, keyboard, and printer. T F

2. A mouse is a peripheral device for giving commands by clicking a button instead of pressing keys. T F

3. A mouse works only with software designed to take mouse commands. T F

4. The correct sequence for turning on the computer is a) put the disk into the disk drive and close the door, b) turn on the monitor, and c) turn on the computer. T F

5. The computer can't get any information from the disk when the disk drive door is open. T F

6. A program disk is a disk containing instructions for the machine. T F

7. A data disk contains information that you create with a program. T F

8. Every time you turn on the power, the computer checks the disk drive for a program disk. If it finds one, it copies the program into the computer's memory and starts to carry out the program's instructions. T F

9. The cursor is a little square, vertical line, or a dash on the screen that marks where the next character you type will appear. T F

Using Computers in the Adult ESOL Lab
Pre-test

10. A list of choices in a program is called a menu. T F

11. Early models of the Apple II didn't have a caps lock key and some early programs don't recognize lower case letters. To get these programs to run correctly, you must keep the caps lock key down. T F

12. Early models of the Apple II didn't have arrow keys. To get early programs to run correctly, check the manual to identify the substitute keys. T F

13. Press the Apple-Control-Reset keys to return the computer to the Hello (first) screen. Always release the reset key first, or it might not work. T F

14. The Escape (Esc) key moves back one level in a menu or stops an operation. T F

15. The Control, Option, and Apple keys combine with other keys to create special effects. T F

16. The (red or green) in-use light tells you when the disk drive is reading (retrieving something) and writing (recording something) on the disk. If you remove the disk or turn off the computer while the light is on, you could damage the disk. T F

17. The 5.25 inch disk can store 140K (143,360 bytes), the 3.5 inch disk can store 800K (819,200 bytes). Hard disks are much faster and 10- and 20-megabyte capacities are common. (One megabyte=one million bytes or characters.) T F

18. The most important rule in caring for disks is NEVER to touch the read-write window (cut-out area). T F

19. ROM stands for Read Only Memory. It is permanent and stores programs needed for machine operations, even when the machine is turned off. T F

Using Computers in the Adult ESOL Lab
Pre-test

20. RAM stands for Random Access Memory, which is temporary. It holds a program while you're running it and creating with it, but disappears when you turn off the machine. T F

21. Programs designed for particular purposes are called "application programs." Examples of categories include: data bases, word processors, spreadsheets, integrated software, graphics, utilities, communications, computer languages, education, entertainment, accounting, home finance, and special interest. T F

22. Integrated software is a group of application programs designed to work together and share data. An advantage is that the commands are shared. This shortens learning time and is more efficient. T F

23. You see the message: I/O Error. This means there is a problem with the exchange of information between the computer and one of its peripheral devices. You should check to make sure all the connections are secure and that the disk is centered within its jacket. If that doesn't work, it could be that the disk is damaged. T F

24. NEVER use a ballpoint pen to write on a disk, NEVER put anything on top of a disk, NEVER use and eraser near a disk, and NEVER hold a disk except at its label. T F

25. The proper sequence to follow to turn off the computer is: a) take the disk out of the drive and put it into its envelope, b) turn off the computer, and c) turn off the monitor. T F

Appendix E

Phase One Skills Checklist

Phase One Skills Checklist

Directions: Use only the **Practice Disk** to demonstrate the following competencies. **ALL** of the competencies must be demonstrated before independent use of the computers in the Lab. Your trainer will sign off on each competency by marking his/her initials and the date as mastery of each competency is demonstrated.

Name: ______________________________

Competency:	Initials:	Date:
1. Gently pick up and hold disk at label end.		
2. Identify the disk drive.		
3. Identify the monitor.		
4. Identify the keyboard.		
5. Identify the computer (cpu).		
6. Insert disk face up into disk drive.		
7. Close disk drive door.		
8. Turn on monitor.		
9. Turn on computer (cpu).		
10. Identify numerical keys.		
11. Identify alphabet keys.		
12. Identify return key.		
13. Identify space bar.		
14. Identify caps lock key.		
15. Identify arrow keys.		
16. Type name on keyboard.		
17. Open disk drive door.		
18. Remove disk from disk drive.		
19. Return disk to jacket.		
20. Turn off computer (cpu).		
21. Turn off monitor.		
22. Return disk to Lab Aide's desk.		

Appendix F

Phase One Workshop Series Post-Test

Phase One Workshop Series Post-test

Using Computers in the Adult ESOL Lab

Name: ______________________________ **Date:** ____________

Directions: Read each statement carefully. Circle **T** if it is true; circle **F** if it is false.

About Apple II computers:

1. The main components of the system are the central processing unit, disk drive, monitor, keyboard, and printer. T F

2. A mouse is a peripheral device for giving commands by clicking a button instead of pressing keys. T F

3. A mouse works only with software designed to take mouse commands. T F

4. The correct sequence for turning on the computer is a) put the disk into the disk drive and close the door, b) turn on the monitor, and c) turn on the computer. T F

5. The computer can't get any information from the disk when the disk drive door is open. T F

6. A program disk is a disk containing instructions for the machine. T F

7. A data disk contains information that you create with a program. T F

8. Every time you turn on the power, the computer checks the disk drive for a program disk. If it finds one, it copies the program into the computer's memory and starts to carry out the program's instructions. T F

9. The cursor is a little square, vertical line, or a dash on the screen that marks where the next character you type will appear. T F

Phase One Workshop Series Post-test

Using Computers in the Adult ESOL Lab

10. A list of choices in a program is called a menu. T F

11. Early models of the Apple II didn't have a caps lock key and some early programs don't recognize lower case letters. To get these programs to run correctly, you must keep the caps lock key down. T F

12. Early models of the Apple II didn't have arrow keys. To get early programs to run correctly, check the manual to identify the substitute keys. T F

13. Press the Apple-Control-Reset keys to return the computer to the Hello (first) screen. Always release the reset key first, or it might not work. T F

14. The Escape (Esc) key moves back one level in a menu or stops an operation. T F

15. The Control, Option, and Apple keys combine with other keys to create special effects. T F

16. The (red or green) in-use light tells you when the disk drive is reading (retrieving something) and writing (recording something) on the disk. If you remove the disk or turn off the computer while the light is on, you could damage the disk. T F

17. The 5.25 inch disk can store 140K (143,360 bytes), the 3.5 inch disk can store 800K (819,200 bytes). Hard disks are much faster and 10- and 20-megabyte capacities are common. (One megabyte=one million bytes or characters.) T F

18. The most important rule in caring for disks is NEVER to touch the read-write window (cut-out area). T F

19. ROM stands for Read Only Memory. It is permanent and stores programs needed for machine operations, even when the machine is turned off. T F

Phase One Workshop Series Post-test

Using Computers in the Adult ESOL Lab

20. RAM stands for Random Access Memory, which is temporary. It holds a program while you're running it and creating with it, but disappears when you turn off the machine. T F

21. Programs designed for particular purposes are called "application programs." Examples of categories include: data bases, word processors, spreadsheets, integrated software, graphics, utilities, communications, computer languages, education, entertainment, accounting, home finance, and special interest. T F

22. Integrated software is a group of application programs designed to work together and share data. An advantage is that the commands are shared. This shortens learning time and is more efficient. T F

23. You see the message: I/O Error. This means there is a problem with the exchange of information between the computer and one of its peripheral devices. You should check to make sure all the connections are secure and that the disk is centered within its jacket. If that doesn't work, it could be that the disk is damaged. T F

24. NEVER use a ballpoint pen to write on a disk, NEVER put anything on top of a disk, NEVER use and eraser near a disk, and NEVER hold a disk except at its label. T F

25. The proper sequence to follow to turn off the computer is: a) take the disk out of the drive and put it into its envelope, b) turn off the computer, and c) turn off the monitor. T F

Appendix G

Phase One Workshop Series Evaluation

Phase One Workshop Series Evaluation

Using Computers in the Adult ESOL Lab

Directions: Please circle the number which most closely matches your opinion regarding the following statements about the workshops:

1 = Strongly agree
2 = Somewhat agree
3 = No opinion
4 = Strongly disagree
5 = Somewhat disagree

1.	I learned new information.	1	2	3	4	5
2.	I reviewed previously learned information.	1	2	3	4	5
3.	I acquired new skills.	1	2	3	4	5
4.	I practiced previously acquired skills.	1	2	3	4	5
5.	The trainer's knowledge of the subject was adequate.	1	2	3	4	5
6.	The workshop content was well planned and organized.	1	2	3	4	5
7.	The workshop materials were helpful.	1	2	3	4	5
8.	I had sufficient opportunity to participate.	1	2	3	4	5
9.	This training will help me do a better job.	1	2	3	4	5
10.	I would participate in more training on this topic.	1	2	3	4	5

Adapted from Broward County Public Schools, Master Inservice Plan, Rev. Ed., 1991.

Appendix H

Phase Two Workshop Series Objectives

Phase Two Workshop Series Objectives

Incorporating New Technology Into the Adult ESOL Curriculum

General Objectives	Specific Objectives
1.0 To disseminate info & develop skills needed for professional growth of adult education psnl.	1.1 To review and discuss andragogical assumptions.

Activities	Evaluation Procedures
1.1.1 Discuss adult learner characteristics & apply to use of computers as learning option.	1.1 List advantages & challenges using computers as lng. resource option.
1.2.1 Demonstration and hands-on activities.	1.2 Use new hardware & software at st. instruc. level & complete min. 3 of 4 prgm. lessons w/out assistance.
1.3.1 Match software content to lab syllabus at st. instruc. level.	1.3 Revised copy of st. lab syllabi to correlate new/old items with minimum 90% accuracy, compared by trainer.
	1.4 Complete true/false posttest with min. 80% accuracy (20 of 25).

Appendix I

Phase Two Workshop Series Outline

Workshop Series II Outline

Incorporating New Technology Into the Adult ESOL Curriculum

Workshop One:

I. Introduction to workshop series
  A. Welcome
  B. Purpose
  C. Schedule
  D. Attendance
  E. Pre-test

II. Introduction/review of adult learning
  A. Adult learner characteristics
  B. Andragogical assumptions
  C. Advantages of computers as learning option
  D. Disadvantages of computers as learning option
  E. Group self-appraisal of knowledge/skill base

III. Introduction/review of computer basics
  A. The five basic parts of a microcomputer
    1. Keyboard
    2. Disk drive
    3. CPU (central processing unit)
    4. Monitor
    5. Printer
  B. New peripheral devices
    1. CD-ROM and compact disk
    2. Vox box
    3. Mouse
    4. Microphone/headset
    5. Modified keyboard
  C. Comparison/contrast of keyboards
    1. Similar keys
      a. alphabet keys and QWERTY format
      b. numerical keys and sequence
      c. shift keys
      d. space bar
      e. caps lock
      f. escape key
      g. delete key
      h. arrow keys
    2. Different keys
      a. return and star keys
      b. calculator keypad
      c. function keys
      d. home and end keys
      e. page up and page down keys
      f. alt keys
      g. talk key
      h. listen key
  C. Hands-on experience

Workshop Series II Outline

Incorporating New Technology Into the Adult ESOL Curriculum

Workshop Two:

I. Review of Workshop One's main points
  A. Names of basic components and peripherals
  B. Location and function
    1. On/off switches
    2. Special indicators
    3. Special keyboard keys

II. Disk care and handling
  A. Review of floppy disk
    1. What it is
    2. What it does
    3. Comparison/contrast of 5.25 and 3.5 inch
  B. Software Do's and Do Not's
    1. Illustrated handouts
    2. Rationale
  C. Copyright Law
    1. What it is
    2. Responsibilities

III. Using the computer for instructional purposes
  A. Types of software on the market
    1. Drill and practice
    2. Tutorial
    3. Simulation/Demonstration
    4. Games
    5. Applications
  B. New computer-based curriculum software
    1. What it is
    2. Where it is located
    3. How it is stored
      a. Manuals
      b. Supplemental materials
    4. How it is accessed
    5. How it is incorporated into syllabi
  C. Review of troubleshooting
    1. What error messages are
    2. What to do when they appear
  D. Hands-on experience

Workshop Series II Outline

Incorporating New Technology Into the Adult ESOL Curriculum

Workshop Three:

- I. Review of previous workshop material
  - A. Workshop One's main points
  - B. Workshop Two's main points
  - C. Computer Assisted Instruction (CAI)
    - 1. What it is
    - 2. Bare facts needed to begin using it
      - a. Location of program content info
      - b. How to modify/manipulate content
  - D. Computer Managed Instruction
    - 1. What it is
    - 2. Bare facts needed to begin using it
      - a. Location of student tracking info
      - b. How to access student records
- II. Hands-on experience
  - A. From student's perspective
  - B. From teacher's perspective

Workshop Series II Outline

Incorporating New Technology Into the Adult ESOL Curriculum

Workshop Four:

I. Review of previous workshop material

II. Hands-on experience

Workshop Series II Outline

Incorporating New Technology Into the Adult ESOL Curriculum

Workshop Five:

- I. Introduction of computer literacy skills to students
  - A. What to teach students about computers
    - 1. hardware
      - a. names of parts
      - b. locations of on/off switches
      - c. getting help
    - 2. software
      - a. how to access
      - b. keyboard keys needed to run
      - c. getting help
    - 3. disk care and handling
      - a. do's and do not's
      - b. advising teacher/lab aide of trouble
    - 4. glossary of basic terms
    - 5. motivating factors
  - B. Simulation
    - 1. checking-out students on equipment
    - 2. assisting students with problems
  - C. Recap summary of workshop contents
  - D. Questions, answers, suggestions and comments
  - E. Post-test
  - F. Survey questionnaire
  - G. Thanks

Appendix J

Phase Two Workshop Series Pre-Test

Incorporating New Technology Into the Adult ESOL Curriculum
Pre-test

Name: ______________________________ **Date:** ___________

Directions: Read each statement carefully. Circle T for true, F for false.

1. Computers can be an effective and efficient resource for adult learners. T F
2. Computers may be used to introduce, practice, remediate, and expand language learning skills. T F
3. One usually interacts with a computer through the keyboard. T F
4. It is also possible to interact with a computer through audio devices, such as headphones. T F
5. A single computer program can now integrate the four skill areas of listening, speaking, reading, and writing. T F
6. The VoxBox is a speech-processing board which is attached to the computer. It enables the recording and playback of authentic speech. T F
7. The term, "CD-ROM," stands for "Compact Disc-Read Only Memory." T F
8. One CD-ROM disc can store information that is equivalent to 1,650 floppy discs. It is faster and more efficient in retrieving information. T F
9. Using computers as a language learning option is highly motivating for adult learners. T F
10. By using computers to acquire language skills, Adult ESOL students participate in a meaningful and relevant, real-world interactive experience. T F

Appendix K

Phase Two Skills Checklist

Phase Two Skills Checklist

Directions: Use only the **Practice Disk** to demonstrate the following competencies. **ALL** of the competencies must be demonstrated before independent use of the computers during Lab. Your trainer will sign off on each competency by placing his/her initials and the date as mastery of each competency is demonstrated.

Name: ____________________

Competency:	Initials:	Date:
1. Identify label end of 3.5 inch disk.		
2. Identify the disk drive.		
3. Identify the monitor.		
4. Identify the keyboard.		
5. Identify the computer (cpu).		
6. Insert disk face up into disk drive.		
7. Close disk drive door.		
8. Turn on monitor.		
9. Turn on computer (cpu).		
10. Identify alphabet keys.		
11. Identify shift keys.		
12. Identify return or star key.		
13. Identify talk and listen keys.		
14. Identify and click the mouse.		
15. Position microphone on headset.		
16. Type name on keyboard.		
17. Press star key after typing text.		
18. Click mouse to select choices.		
19. Identify "light pen" as synonym for "mouse" in this program.		
20. Type capitals and punctuation.		
21. Use talk key to record voice.		
22. Use mouse and icons to back out.		

Appendix L

Phase Two Workshop Series Post-Test

Phase Two Workshop Series Post-test

Incorporating New Technology Into the Adult ESOL Curriculum

Name: ______________________________ **Date:** ____________

Directions: Read each statement carefully. Circle T for true, F for false.

1. Computers can be an effective and efficient resource for adult learners. T F
2. Computers may be used to introduce, practice, remediate, and expand language learning skills. T F
3. One usually interacts with a computer through the keyboard. T F
4. It is also possible to interact with a computer through audio devices, such as headphones. T F
5. A single computer program can now integrate the four skill areas of listening, speaking, reading, and writing. T F
6. The VoxBox is a speech-processing board which is attached to the computer. It enables the recording and playback of authentic speech. T F
7. The term, "CD-ROM," stands for "Compact Disc-Read Only Memory." T F
8. One CD-ROM disc can store information that is equivalent to 1,650 floppy discs. It is faster and more efficient in retrieving information. T F
9. Using computers as a language learning option is highly motivating for adult learners. T F
10. By using computers to acquire language skills, Adult ESOL students participate in a meaningful and relevant, real-world interactive experience. T F

Appendix M

Phase Two Workshop Series Evaluation

Phase Two Workshop Series Evaluation

Incorporating New Technology Into the Adult ESOL

Directions: Please circle the number which most closely matches your opinion regarding the following statements about the workshops:

1 = Strongly agree
2 = Somewhat agree
3 = No opinion
4 = Strongly disagree
5 = Somewhat disagree

1.	I learned new information.	1	2	3	4	5
2.	I reviewed previously learned information.	1	2	3	4	5
3.	I acquired new skills.	1	2	3	4	5
4.	I practiced previously acquired skills.	1	2	3	4	5
5.	The trainer's knowledge of the subject was adequate.	1	2	3	4	5
6.	The workshop content was well planned and organized.	1	2	3	4	5
7.	The workshop materials were helpful.	1	2	3	4	5
8.	I had sufficient opportunity to participate.	1	2	3	4	5
9.	This training will help me do a better job.	1	2	3	4	5
10.	I would participate in more training on this topic.	1	2	3	4	5

Appendix N

Student Lab Activity Log

TEACHER: ______________________ DATE: ____________

STUDENT	CASSETTE RECORDER	LANGUAGE MASTER	COMPUTER	TEST	OTHER	MATERIALS USED

Student Lab Activity Log

Appendix O

Student Survey

Computers in the Adult ESOL Language Lab
Student Survey

Directions: Think about how you feel about using computers in the language lab. Then read the statements below. Complete each statement by making a circle around the word which best describes how you feel. You may write your own words, if you prefer, where it says "other."

1. I use computers in the lab

frequently   sometimes   never

other:____________________

2. When I use computers, I like to

read   learn vocabulary   practice typing

practice grammar   take tests   play games

practice listening, speaking, reading, and writing at the same time

other:____________________

3. When I use computers, I like to work

alone   with a partner   in a group

4. When I use the computers, I need the teacher's help to

choose an activity   understand vocabulary

solve a problem with the machine

other:____________________

5. When I choose computers in the lab, it is because

they are patient   they are interesting

they have colorful pictures   they are fun

other:____________________

Computers in the Adult ESOL Language Lab
Student Survey

6. The new computers in the lab are more

interesting challenging difficult
frustrating helpful colorful fun
other:__________________

7. When I am in the lab, I prefer to practice

listening speaking reading writing
other:______________________

8. What helps me the most in the lab are

books with cassettes grammar exercises
books with pictures language master cards
writing compositions taking tests
computers for reading and writing
computers for listening, speaking, reading, and writing
having many choices other:__________________

9. I would like to have lab

two times a week three times a week
every day never other:_____________

10. I want to use computers in the lab

two times a week three times a week
every day never other:_____________

11. What I like best about computers is the

program lesson or game keyboard mouse
headphone/microphone graphic pictures
other:__________________

Appendix P

Phase Three Objectives

Phase Three Objectives

General Objectives	Specific Objectives
1.0 To enable adult ESOL students to use new computer technology independently.	1.1 To seek financial support for the production and dissemination of a student manual.

Activities	Evaluation Procedures
1.1.1 To develop a rationale based on research and ESOL staff recommendations.	1.1 A sample letter to software producer and grant application.

Adapted from Broward County Public Schools, Master Inservice Plan, Rev. Ed., 1991.

Appendix Q

Phase One Attendance Summary

Phase One Attendance Summary

X = Participant Present

Workshop #:	1	2	3	4	5
Teacher A	X	X	X	X	X
Teacher B	X	X	X	X	X
Teacher C	X	X	X	X	X
Teacher D	X	X	X	X	X
Teacher E	X	X	X	X	X
Teacher F	X	X	X	X	X
Teacher G	X	X	X	X	X
Teacher H	X	X	X	X	X
Teacher I	X	X	X	X	X
Teacher J	X	X	X	X	X
Teacher K	X	X	X	X	X
Teacher L	X	X	X	X	X
Teacher M	X	X	X	X	X
Lab Aide N	X	X	X	X	X
Lab Aide O	X	X	X	X	X
Lab Aide P	X	X	X	X	X

Appendix R

Phase One Skills Checklist Summary

Phase One Skills Checklist Summary

X = All 22 Behavioral Competencies Demonstrated by Participant

= Item Number of Behavioral Competency Missed

Workshop #:	1	2	3	4	5
Teacher A	X	X	X	X	X
Teacher B	X	X	X	X	X
Teacher C	X	X	X	X	X
Teacher D	X	X	X	X	X
Teacher E	X	X	X	X	X
Teacher F	X	X	X	X	X
Teacher G	X	X	X	X	X
Teacher H	X	X	X	X	X
Teacher I	X	X	X	X	X
Teacher J	X	X	X	X	X
Teacher K	X	X	X	X	X
Teacher L	X	X	X	X	X
Teacher M	X	X	X	X	X
Lab Aide N	X	X	X	X	X
Lab Aide O	X	X	X	X	X
Lab Aide P	X	X	X	X	X

Appendix S

Phase One Group A t-test

Phase One Group A t-test for Nonindependent Samples

X_1	X_2	D	D^2
72	100	+28	784
100	100	---	---
84	100	+16	256
96	100	+ 4	16
68	100	+32	1024
84	100	+16	256
96	100	+ 4	16
80	100	+20	400
96	100	+ 4	16
100	100	---	---
100	100	---	---

$\Sigma D = 124$ $\Sigma D^2 = 2768$

$$\bar{D} = \frac{\Sigma D}{N} = \frac{124}{11} = 11.27$$

$$t = \frac{\bar{D}}{\sqrt{\dfrac{\Sigma D^2 - \dfrac{(\Sigma D)^2}{N}}{N(N-1)}}}$$

$$t = \frac{11.27}{\sqrt{\dfrac{2768 - \dfrac{(124)^2}{11}}{11(11-1)}}}$$

$$t = \frac{11.27}{\sqrt{\dfrac{2768 - \dfrac{15376}{11}}{110}}}$$

$$t = \frac{11.27}{\sqrt{\dfrac{2768 - 1397.82}{110}}}$$

$$t = \frac{11.27}{\sqrt{\dfrac{1370.18}{110}}}$$

$$t = \frac{11.27}{\sqrt{12.46}}$$

$$t = \frac{11.27}{3.53}$$

$$t = 3.19$$

Appendix T

Phase One Group B t-test

Phase One Group B t-test for Nonindependent Samples

X_1	X_2	D	D^2
76	100	+24	576
100	100	---	---
100	100	---	---
84	100	+16	256
92	100	+8	64
		$\Sigma D = 48$	$\Sigma D^2 = 896$

$$\bar{D} = \frac{\Sigma D}{N} = \frac{48}{5} = 9.60$$

$$t = \frac{\bar{D}}{\sqrt{\dfrac{\Sigma D^2 - \dfrac{(\Sigma D)^2}{N}}{N(N-1)}}}$$

$$t = \frac{9.6}{\sqrt{\dfrac{896 - \dfrac{2304}{5}}{5(5-1)}}}$$

$$t = \frac{9.6}{\sqrt{\dfrac{896 - 460.8}{20}}}$$

$$t = \frac{9.6}{\sqrt{\dfrac{435.20}{20}}}$$

$$t = \frac{9.6}{\sqrt{21.76}}$$

$$t = \frac{9.6}{4.66}$$

$$t = 2.06$$

Appendix U

Phase One Evaluation Summary

Phase One Evaluation Summary

Using Computers in the Adult ESOL Lab

	Strongly Agree	Somewhat Agree	No Opinion	Strongly Disagree	Somewhat Disagree
1. I learned new information.	88%	12%	--	--	--
2. I reviewed previously learned information.	88%	12%	--	--	--
3. I acquired new skills.	94%	6%	--	--	--
4. I practiced previously acquired skills.	88%	12%	--	--	--
5. The trainer's knowledge of the subject was adequate.	100%	--	--	--	--
6. The workshop content was well planned and organized.	88%	12%	--	--	--
7. The workshop materials were helpful.	88%	12%	--	--	--
8. I had sufficient opportunity to participate.	94%	6%	--	--	--
9. This training will help me do a better job.	81%	19%	--	--	--
10. I would participate in more training on this topic.	63%	27%	--	--	--

Adapted from Broward County Public Schools, Master Inservice Plan, Rev. Ed., 1991.

Appendix V

Phase Two Attendance Summary

Phase Two Attendance Summary

X = Participant Present

Workshop #:	1	2	3	4	5
Teacher A	X	X	X	X	X
Teacher B	X	X	X	X	X
Teacher C	X	X	X	X	X
Teacher D	X	X	X	X	X
Teacher E	X	X	X	X	X
Teacher F	X	X	X	X	X
Teacher G	X	X	X	X	X
Teacher H	X	X	X	X	X
Teacher I	X	X	X	X	X
Teacher J	X	X	X	X	X
Teacher K	X	X	X	X	X
Teacher L	X	X	X	X	X
Teacher M	X	X	X	X	X
Lab Aide N	X	X	X	X	X
Lab Aide O	X	X	X	X	X
Lab Aide P	X	X	X	X	X

Appendix W

Conference Program Booklet Workshop Synopsis

Adult & Community Educators:

"Focus on Quality"

1992 ACE of Florida Conference
Fort Lauderdale, Florida

Administrators Meeting Continued

Rooms A & B

Accountability and Restructuring: What Role for Adult and Community Educators?

Salon C

Peter Easton is working with Panhandle counties helping them to comply with the accountability requirements. This session will deal with those experiences.

Presenter: Peter A. Easton
Facilitator: Dr. Nancy Adams

From Fried Green Tomatoes to Cold Sassy Tree . . . An Adult Educator's Tool

Marlin

Learn how literary works such as *Fried Green Tomatoes* can add to your quality performance as an adult educator. From image building to academic role-modeling, *Fried Green Tomatoes* provides a stimulating workshop where you will not only broaden your cultural and artistic awareness but also learn strategies for strengthening performance and quality. You will find yourself laughing and sharing views of the South. This educational model promises to be a springboard for enhancing quality in your instructional/supervisory role.

Presenters: Angela Cerise Murray, Dr. Beverly Boothe
Facilitator: Karolyn Sebree

ESOL Instruction: A New Approach

Dolphin

Lab strategies and design will be discussed along with video, audio, computer and written materials. The computer-assisted learning center will be described, including testing, assessment and record keeping methods.

Presenters: Ronald Caddy, Carol Grassi, Cheryl Rogers
Facilitator: Ida Rivera

THURSDAY 12:00 - 1:15

Hall of Fame Luncheon

THURSDAY 1:30

Probationers' Educational Growth

Section I

How will you and your district be affected by the recently passed PEG legislation, which recommends education as a condition of probation? Learn all the ins and outs of the legislation and the Florida State Probationers Educational Growth Program. Graduate students will be available to answer questions and offer their perspective on the program.

Presenters: Brenda J. Glass, Liza McFadden, Shahrokh Massoudi
Facilitator: Marilyn Brisson

BEST

Curriculum and Activities for Students With Special Needs

Section I

During 1990-91, through a 353 Project Grant, Leon County Schools Adul and Community Education revised and expanded its comprehensiv *Curriculum for Students with Special Needs* and the correlating *Activitie for Students with Special Needs*. The major objective of this project was to improve educational programs for adult handicapped students. Project materials are excellent resources for enhancement of existing programs and can be invaluable for districts who are planning new programs for adult handicapped students on all ability levels.

Presenters: Barbara Van Camp, Veronica Sehrt
Facilitator: Barbara Van Camp

Computer Connections to Success in Adult ESOL

Section III

This program highlights adult learning assumptions and presents guidelines to be considered in the incorporation of computer assisted instruction into the Adult ESOL curriculum. Opportunities to collaborate and share ideas for adaption and implementation will be provided. The teacher's role as facilitator with technological learning options will be explored.

Presenter: Kathe LaFlamme
Facilitator: Dr. Betty Richey

Certification Update: Changes As They Relate To Adult Educators

Section IV

Presenters: Audrey Huggins, James Dodd
Facilitator: Herman Fernandez

Accountability and School Improvement (1:00 P.M. - 4:30 P.M.)

Salon A & B

What has happened in the Accountability movement in Florida and how does that impact adult and community educators?

Presenters: Ron Froman, Moderator
Commissioner Carrie Meek*
Commissioner Latha Krishnaiyer*
Commissioner Ira Goldenberg*
Response: Large District (Dade)*
Medium Sized District (Leon)*
Small District (Hamilton)*
Bunny Hanley, ACE Executive Director
Facilitator: Dr. Connie Hicks-Evans

* Not confirmed as of printing.

OPY AVAILABLE

Appendix X

Phase Two Skills Checklist Summary

Phase Two Skills Checklist Summary

X = All 22 Behavioral Competencies Demonstrated

= Item Number of Behavioral Competency Missed

Workshop #:	1	2	3	4	5
Teacher A	X	X	X	X	X
Teacher B	X	X	X	X	X
Teacher C	X	X	X	X	X
Teacher D	X	X	X	X	X
Teacher E	X	X	X	X	X
Teacher F	X	X	X	X	X
Teacher G	X	X	X	X	X
Teacher H	X	X	X	X	X
Teacher I	X	X	X	X	X
Teacher J	X	X	X	X	X
Teacher K	X	X	X	X	X
Teacher L	X	X	X	X	X
Teacher M	X	X	X	X	X
Lab Aide N	X	X	X	X	X
Lab Aide O	X	X	X	X	X
Lab Aide P	X	X	X	X	X

Appendix Y

Phase Two Evaluation Summary

Phase Two Evaluation Summary

Incorporating New Technology Into the Adult ESOL Lab

	Strongly Agree	Somewhat Agree	No Opinion	Strongly Disagree	Somewhat Disagree
1. I learned new information.	100%	--	--	--	--
2. I reviewed previously learned information.	94%	6%	--	--	--
3. I acquired new skills.	94%	6%	--	--	--
4. I practiced previously acquired skills.	88%	12%	--	--	--
5. The trainer's knowledge of the subject was adequate.	100%	--	--	--	--
6. The workshop content was well planned and organized.	88%	12%	--	--	--
7. The workshop materials were helpful.	88%	12%	--	--	--
8. I had sufficient opportunity to participate.	88%	12%	--	--	--
9. This training will help me do a better job.	88%	12%	--	--	--
10. I would participate in more training on this topic.	81%	19%	--	--	--

Adapted from Broward County Public Schools, Master Inservice Plan, Rev. Ed., 1991.

Appendix Z

Phase Two Groups A and B t-test

Phase Two Groups A and B t-test for Nonindependent Samples

	X_1	X_2	D	D^2
Group A	100	100	---	---
	100	100	---	---
	90	100	+10	100
	100	100	---	---
	100	100	---	---
	100	100	---	---
	80	100	+20	400
	100	100	---	---
	100	100	---	---
	100	100	---	---
	60	100	+40	1600
Group B	100	100	---	---
	100	100	---	---
	100	100	---	---
	70	100	+30	900
	100	100	---	---
			$\Sigma D = 100$	$\Sigma D^2 = 3000$

$$\bar{D} = \frac{\Sigma D}{N} = \frac{100}{16} = 6.25$$

Combined Groups A and B

$$t = \frac{\bar{D}}{\sqrt{\frac{\Sigma D^2 - \frac{(\Sigma D)^2}{N}}{N(N-1)}}}$$

$$t = \frac{6.25}{\sqrt{\frac{3000 - \frac{10000}{16}}{16(16-1)}}}$$

$$t = \frac{6.25}{\sqrt{\frac{3000 - 625}{240}}}$$

$$t = \frac{6.25}{\sqrt{\frac{2375}{240}}}$$

$$t = \frac{6.25}{\sqrt{9.90}}$$

$$t = \frac{6.25}{3.15}$$

$$t = 1.98$$

Phase Two Group A t-test for Nonindependent Samples

X_1	X_2	D	D^2
100	100	---	---
100	100	---	---
90	100	+10	100
100	100	---	---
100	100	---	---
100	100	---	---
80	100	+20	400
100	100	---	---
100	100	---	---
100	100	---	---
60	100	+40	1600

$\Sigma D = 70$ $\Sigma D^2 = 2100$

$$\bar{D} = \frac{\Sigma D}{N} = \frac{70}{11} = 6.36$$

$$t = \frac{\bar{D}}{\sqrt{\dfrac{\Sigma D^2 - \dfrac{(\Sigma D)^2}{N}}{N(N-1)}}}$$

$$t = \frac{6.36}{\sqrt{\dfrac{2100 - \dfrac{4900}{11}}{11(11-1)}}}$$

$$t = \frac{6.36}{\sqrt{\dfrac{2100 - 445.45}{110}}}$$

$$t = \frac{6.36}{\sqrt{\dfrac{1654.55}{110}}}$$

$$t = \frac{6.36}{\sqrt{15.04}}$$

$$t = \frac{6.36}{3.88}$$

$$t = 1.64$$

Phase Two Group B t- test for Nonindependent Samples

X_1	X_2	D	D^2
100	100	---	---
100	100	---	---
100	100	---	---
70	100	$^{+}30$	900
100	100	---	---
		$\Sigma D = 30$	$\Sigma D^2 = 900$

$$\bar{D} = \frac{\Sigma D}{N} = \frac{30}{5} = 6$$

$$t = \frac{\bar{D}}{\sqrt{\dfrac{\Sigma D^2 - \dfrac{(\Sigma D)^2}{N}}{N(N-1)}}}$$

$$t = \frac{6}{\sqrt{\dfrac{900 - \dfrac{900}{5}}{5(5-1)}}}$$

$$t = \frac{6}{\sqrt{\dfrac{900 - 180}{20}}}$$

$$t = \frac{6}{\sqrt{\dfrac{720}{20}}}$$

$$t = \frac{6}{\sqrt{36}}$$

$$t = \frac{6}{6}$$

$$t = 0$$

Appendix AA

Phase Two Subgroup t-test

Phase Two Subgroup t-test for Nonindependent Samples

X_1	X_2	D	D^2
90	100	+10	100
80	100	+20	400
70	100	+30	900
60	100	+40	1600
		$\Sigma D = 100$	$\Sigma D^2 = 3000$

$$\bar{D} = \frac{\Sigma D}{N} = \frac{100}{4} = 25$$

$$t = \frac{\bar{D}}{\sqrt{\dfrac{\Sigma D^2 - \dfrac{(\Sigma D)^2}{N}}{N(N-1)}}}$$

$$t = \frac{25}{\sqrt{\dfrac{3000 - \dfrac{10000}{4}}{4(4-1)}}}$$

$$t = \frac{25}{\sqrt{\dfrac{3000 - 2500}{12}}}$$

$$t = \frac{25}{\sqrt{\dfrac{500}{12}}}$$

$$t = \frac{25}{\sqrt{41.666}}$$

$$t = \frac{25}{6.455}$$

$$t = 3.873$$

Appendix BB

Phase One Computer Selection

PHASE ONE COMPUTER SELECTION

	WEEK #1					WEEK #2					WEEK #3					WEEK #4					WEEK #5					
DAY #	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	DAY #
TEACHER CODE	L	L	M	F	K	L	L	M	F	K	L	L	M	F	K	L	L	M	F	K	L	L	M	F	K	PERIOD #1
ORIGINAL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4	4	4	4	3	4	4	
NEW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TEACHER CODE	B	C	D	J	E	B	C	D	J	E	B	C	D	J	E	B	C	D	J	E	B	C	D	J	E	PERIOD #2
ORIGINAL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4	3	4	4	4	4	4	4	
NEW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TEACHER CODE	M	E	A	D	A	M	E	A	D	A	M	E	A	D	A	M	E	A	D	A	M	E	A	D	A	PERIOD #3
ORIGINAL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4	3	4	4	3	2	4	4	
NEW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TEACHER CODE	C	K	B	M	M	C	K	B	M	M	C	K	B	M	M	C	K	B	M	M	C	K	B	M	M	PERIOD #4
ORIGINAL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	
NEW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TEACHER CODE	J	F	L	L	L	J	F	L	L	L	J	F	L	L	L	J	F	L	L	L	J	F	L	L	L	PERIOD #5
ORIGINAL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	4	0	4	4	4	4	4	4	4	
NEW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

DAILY USAGE TOTALS

	WEEK #1					WEEK #2					WEEK #3					WEEK #4					WEEK #5				
DAY #	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
ORIGINAL	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	16	19	16	18	20	20	19	17	20	19
NEW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	0	0	0	0	0	0	0	0

WEEKLY USAGE AVERAGE

	WEEK #1	WEEK #2	WEEK #3	WEEK #4	WEEK #5
ORIGINAL	100%	100%	100%	89%	95%
NEW	0%	0%	0%	0%	0%

OVERALL PERCENTAGE OF USE FOR THIS PHASE

ORIGINAL	97%
NEW	0%

Appendix CC

Phase Two Computer Selection

PHASE TWO COMPUTER SELECTION

	WEEK #1					WEEK #2					WEEK #3					WEEK #4					WEEK #5					
DAY #	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	DAY #
TEACHER CODE	L	L	M	F	K	L	L	M	F	K	L	L	M	F	K	L	L	M	F	K	L	L	M	F	K	PERIOD #1
ORIGINAL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
NEW	0	2	3	3	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
TEACHER CODE	B	C	D	J	E	B	C	D	J	E	B	C	D	J	E	B	C	D	J	E	B	C	D	J	E	PERIOD #2
ORIGINAL	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
NEW	0	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
TEACHER CODE	M	E	A	D	A	M	E	A	D	A	M	E	A	D	A	M	E	A	D	A	M	E	A	D	A	PERIOD #3
ORIGINAL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
NEW	0	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
TEACHER CODE	C	K	B	M	M	C	K	B	M	M	C	K	B	M	M	C	K	B	M	M	C	K	B	M	M	PERIOD #4
ORIGINAL	4	3	4	4	4	4	3	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	
NEW	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	
TEACHER CODE	J	F	L	L	L	J	F	L	L	L	J	F	L	L	L	J	F	L	L	L	J	F	L	L	L	PERIOD #5
ORIGINAL	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
NEW	0	2	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	

DAILY USAGE TOTALS

	WEEK #1					WEEK #2					WEEK #3					WEEK #4					WEEK #5				
DAY #	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
ORIGINAL	20	18	20	20	20	20	19	20	20	20	20	20	19	20	20	20	20	20	20	20	20	20	20	20	20
NEW	00	14	19	19	16	19	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	20	20	20	20

WEEKLY USAGE AVERAGE

	WEEK #1	WEEK #2	WEEK #3	WEEK #4	WEEK #5
ORIGINAL	98%	99%	99%	100%	100%
NEW	68%	99%	100%	99%	100%

OVERALL PERCENTAGE OF USE FOR THIS PHASE

ORIGINAL	99%
NEW	93%

Appendix DD

Student Survey Summary

Computers in the Adult ESOL Language Lab
Student Survey

Directions: Think about how you feel about using computers in the language lab. Then read the statements below. Complete each statement by making a circle around the word which best describes how you feel. You may write your own words, if you prefer, where it says "other."

1. I use computers in the lab

   frequently 30% sometimes 75% never 6%

   other: .7%

2. When I use computers, I like to

   read 15% learn vocabulary 28% practice typing 25%

   practice grammar 40% take tests 7% play games 4%

   practice listening, speaking, reading, and writing at the same time 42%

   other: 1%

3. When I use computers, I like to work

   alone 49% with a partner 41% in a group 7%

4. When I use the computers, I need the teacher's help to

   choose an activity 17% understand vocabulary 37%

   solve a problem with the machine 48%

   other: .4%

5. When I choose computers in the lab, it is because

   they are patient 15% they are interesting 79%

   they have colorful pictures 7% they are fun 5%

   other: 2%

Computers in the Adult ESOL Language Lab
Student Survey

6. The new computers in the lab are more

interesting 53% challenging 7% difficult 12%
frustrating 3% helpful 34% colorful 3% fun 4%
other: 3%

7. When I am in the lab, I prefer to practice

listening 40% speaking 39% reading 35% writing 29%
other: 9%

8. What helps me the most in the lab are

books with cassettes 19% grammar exercises 20%
books with pictures 4% language master cards 3%
writing compositions 3% taking tests 10%
computers for reading and writing 21%
computers for listening, speaking, reading, and writing 59%
having many choices 3% other: 1%

9. I would like to have lab

two times a week 35% three times a week 26%
every day 37% never .7% other: 1%

10. I want to use computers in the lab

two times a week 40% three times a week 32%
every day 25% never .7% other: 2%

11. What I like best about computers is the

program lesson or game 52% keyboard 12% mouse 2%
headphone/microphone 26% graphic pictures 15%
other: 2%

Student Survey Summary

	# surveys returned:	# students per class:	percent response:
Teacher A:	35	53	66
Teacher B:	28	41	68
Teacher C:	28	37	76
Teacher D:	21	25	84
Teacher E:	23	23	100
Teacher F:	26	37	70
Teacher G:	22	22	100
Teacher H:	20	23	87
Teacher I:	24	38	63
Teacher J:	42	49	86
Total:	270	348	80

Appendix EE

Sample Funding Request Letter

Gene A. Whiddon Adult Center
1441 So. Federal Highway
Ft. Lauderdale, FL 33316

The Roach Organization, Inc.
1300 Executive Center Drive, Suite 103
Tallahassee, FL 32301
Attn: Lana Tillman, Educational Specialist

June 20, 1992

Dear Ms. Tillman:

The Gene A. Whiddon Adult Center, a Broward County public school, is dedicated to the promotion of success through education. As you know, the center recently purchased the computer-based I Can Read curriculum and installed it in the ESOL language lab. A comprehensive action research project was implemented to develop necessary computer skills among the ESOL staff and students and incorporate the new technology into the existing program. The response to this innovative and integrated approach to language acquisition has been enthusiastic.

The majority of students have been especially impressed by the authentic speech capabilities. On a recent survey, 53% of the 270 respondents rated the new equipment as more interesting and 34% as more helpful. We are encouraged by these early signs of student satisfaction. However, in addition to the language assistance that ESOL students need, it is evident that students through all the class levels require substantial amounts of technical support in operating the equipment and navigating within the sections.

Regrettably large teacher-student ratios and limited amounts of lab time often prevent the individual student from efficient and effective practice opportunities when he or she is unable to understand the print materials which accompany the hardware and software. The "Getting Started" segment of the program is not helpful to our pre-literate or beginning students and quite a few intermediates have given up on it as well.

The consensus among our ESOL faculty is that a concise student manual, based on adult learning assumptions and ESOL strategies and techniques could enable and promote the student's independent use in a cost-effective manner. We are highly interested and motivated in resolving problems experienced by our students as the result of not having such a manual and would appreciate an opportunity to further discuss and explore with you our ideas for its production.

Please call me to arrange a time when we can meet.

Very truly yours,

Kathleen LaFlamme
ESOL Instructor

Appendix FF

Sample Grant Application

DRAFT PROPOSAL

NEED

NEED/PROBLEM TO BE SOLVED: Briefly explain the problem or need to be addressed by this proposal, giving the evidence of its scope, prevalence and significance at your school. Tell what conditions are believed to cause the problem. Explain the effect the problem has on the performance of the individuals involved. Needs must be documented and not based on unsupported assumptions.

The Gene A. Whiddon Adult Center in Ft. Lauderdale, Florida, has consistently recognized and responded to the unique needs of the diverse community it serves. The English for Speakers of Other Languages (ESOL) program currently accommodates one third of the school's population and has a minimum daily average attendance of 800 students among 20 day and evening classes. Students represent more than 50 countries and 35 native languages. A broad, eclectic range of teaching/learning strategies and materials is used to provide instruction in English from the pre-literate through the advanced levels, and in the language lab as well as the classrooms.

Trends of increasing enrollments have not only widened teacher-student ratios, but have also brought to the program many students who are noticeably deficient in native language literacy skills. Consequently, an at-high-risk group of students now exists and demonstrates high rates of frustration, failure, and drop-out (48% programwide). As a result, the ability of these students to function independently in the community is substantially jeopardized.

It has been widely documented that technological skills are critical to increasing adults' employability and that computer assisted instruction positively impacts language acquisition efforts. Since 1990, two comprehensive action research projects have been conducted in order to develop computer literacy skills among ESOL staff and students, and learning options have been expanded through the introduction of an innovative computer-based curriculum. In the most recent survey, 37% of the students verified that they need the teacher/lab aide's help with language when using the computers; 48% said they require technical assistance. A student manual which is based on adult learning assumptions and ESOL techniques is urgently needed to enable and promote the students' independent use of the new technology, sustain student motivation, and reinforce meaningful and relevant language acquisition efforts.

OBJECTIVES

PROJECT OBJECTIVES: Indicate the major objectives (related to the problem or need) of this project, in quantified terms.

> **EXAMPLE:** To reduce the incidence of external expulsions for all seventh grade students at Crosstown High, by 10% during the twelve month period of this project.

Do not list activities. Indicate the amount (quantified) of change, in some measureable indicator, that is expected to occur during a specified timeframe.

Objective 1:

To provide, by May, 1994, each of the four new computers in the ESOL lab with a specially-developed, quick-reference student manual which will (1) illustrate and label the basic parts, and unique features, of the equipment which will be used by students, (2) illustrate the location and state the function of basic features, (3) enumerate easy-to-understand, step-by-step instructions for using the hardware and program segments, and (5) include pictures, wherever possible, to reinforce the program's vocabulary.

Objective 2:

To produce, by May, 1994, a transportable set of teaching/learning materials that will correlate to the student manual and include enlarged, easy-to-see, and labeled illustrations of the basic parts and unique features of the new computer equipment.

Objective 3:

To reduce, by a minimum of 25%, the amount of assistance students require from the teacher or lab aide in order to operate the new equipment, as measured by a comparison of the number of student requests for the two weeks before and after introducing the student manual.

Objective 4:

Objective 5:

METHODS

METHODS: Indicate the methods you will use to accomplish your stated objectives. List the major activities you plan to carry out and the dates when major activities will be initiated and completed. (This section becomes the management plan for the project.)

The methods listed should be related to the objectives and capable of producing the desired change. The methods should be sound, reasonable (in terms of time) and clearly necessary to produce the desired change.

EXAMPLE: Arrange for the visit of the Alternative Discipline Trainer 10/90
Purchase training materials, schedule and announce workshops 11/90 - 12/90
Conduct workshops for teachers and administrators 1/91 - 3/91
Evaluate workshops 1/91 - 3/91

ACTIVITIES:	DATES:
Committee will meet to identify, select, categorize, and prioritize items to be illustrated, labeled, enumerated, and/or represented by pictures in the student manual.	8/93
Committee will meet 2 hours per week for 12 weeks to develop student manual.	8/93- 2/94
Committee will meet for 2 hours per week for 3 weeks to develop transportable, teacher-made materials.	2/94- 3/94
Committee will pilot use of student manual with one or more ESOL classes and obtain feedback.	4/94- 5/94
ESOL program chairperson will review finalized version of student manual for final approval.	6/94

EVALUATION

EVALUATION: Indicate how you will document that the activities (methods) to be carried out produce a measurable benefit and achieve project objectives. Indicate the projected dates that evaluation activities will be carried out. Restate the objectives when writing the evaluation.

EXAMPLE:
Objective 1: To reduce external expulsions for all seventh grade students at Crosstown High, by 10% during the twelve month period of this project.

At the end of the twelve month project (6/91) the number of external expulsions for all seventh grade students at Crosstown High will be counted and compared to the number of students externally suspended the year before to determine the percent of reduction.

EVALUATION - Objective 1:	**DATES:**
By May, 1994, a copy of a student manual will have been developed, produced, and placed in the language lab to accompany each of the four new computers.	May, 1994
EVALUATION - Objective 2:	
By May, 1994, a transportable set of teaching/learning companion materials will have been developed, produced, and made available for use by all the ESOL classes.	May, 1994
EVALUATION - Objective 3:	
At the end of the project (6/94) and for a selected class, the number of student requests for assistance with the new technology will be counted for the month prior to the introduction of the student manual and compared with the number of requests for the month after the students began using the manual.	(6/94)
EVALUATION - Objective 4:	
EVALUATION - Objective 5:	

BUDGET

BUDGET: Enter the cost categories, description of the costs, and the amounts required to carry out the activities indicated in the METHODS section of the proposal. All costs must clearly relate to an activity mentioned elsewhere in the proposal. Group like costs under the same category or follow the budget outline provided by the funding agency:

PERSONNEL:		function/object	**AMOUNT**
Salaries:	(4) Full-time teachers	2041/190	$3500.00
	(1) Part-time clerical	2041/102	$1500.00
Fringe Benefits:	Teacher fringe (33%)	2041/200	$1155.00
	Clerical fringe (33%)	2041/200	$495.00
Consultant Payments:	Nil		
MATERIALS & SUPPLIES:			
Instructional Materials			
Software	Desktop Publishing Software	2041/410	$500.00
Office Supplies	Laminating, poster boards, paper, toner, drawing, painting supplies, binding materials	2041/410	$3000.00
EQUIPMENT:			
Office Furniture	Nil		
Equipment	Nil		
OTHER:			
Travel	Nil		
Periodicals	Nil		